HOYA NEW

Places where hoyas grow, Sumatra

A pdf publication devoted to the Genus Hoya ISSN 2329-7336

Editor:
Dale Kloppenburg

Volume I Issue 4
December 2013

Contents

This first issue will be devoted to the publication of some new hoya species from the Philippines. I have accumulated a backlog of unpublished species and feel it necessary to publish these species namely in the name of conservation. When a species is collected from the wild, I feel it is wise to identify it, propagate it and name it. In this way it will eventually get it into commercial channels, be distributed to all those interested in this genus and thus be preserved. If in the future the species is lost through natural causes or forest destruction it will still be here on earth in your collection.

The following new species are presented in PDF format with ISSN number.

1. **Hoya bebsguevarrae** Kloppenburg & Carandang
2. **Hoya celsa** Kloppenburg, Siar, Guevarra, Cajano & Carandang
3. **Hoya chiekoae** Kloppenburg, Ferreras & Mendoza
4. **Hoya unruhiana** Kloppenburg, Siar, Mendoza, Cajano & Carandang
5. **Hoya williamsiana** Kloppenburg, Siar, Mendoza, Cajano, Guevarra & Carandang
6. **Hoya coriacea subsp. philippinensis** Kloppenburg, Siar & Ferreras
7. **Hoya myrmecopa subsp. kanaloensis** Kloppenburg, Siar, Cajano, Guevarra & Carandang
8. **Hoya pseudoleytensis** Kloppenburg, Mendoza, Guevarra & Carandang

NOTE: please see the Website publication of these species at **"www.rare-hoyas.com"**. Go to end and click on "publication" to access new species publications.

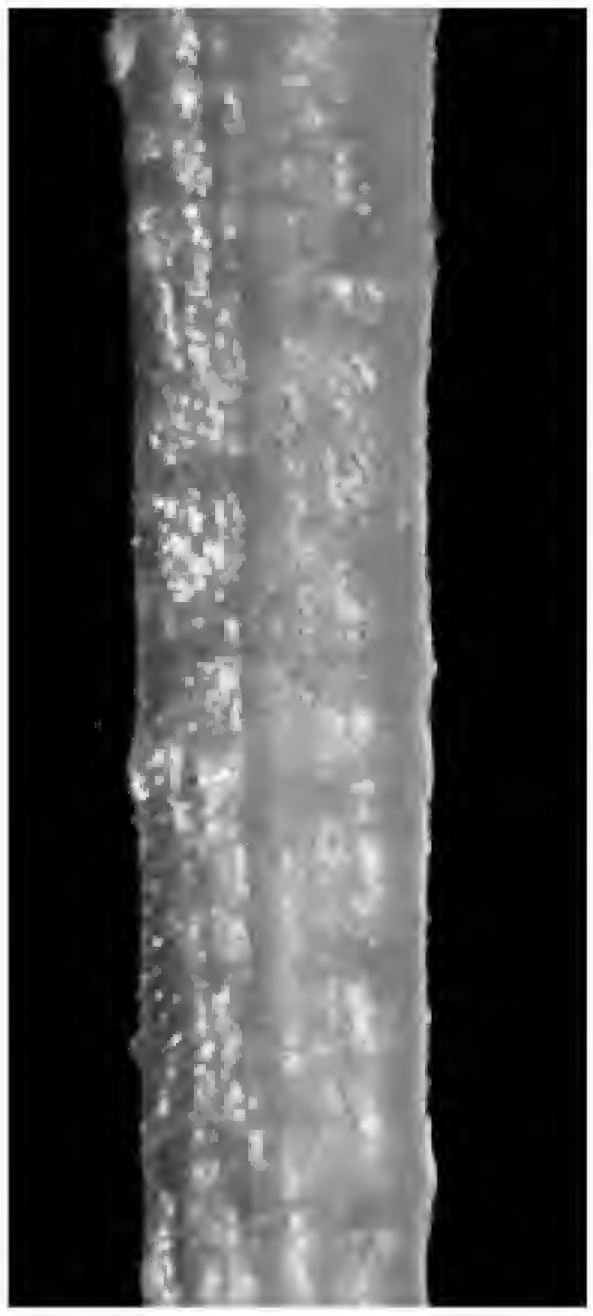
Hoya bebsguevarrae Kloppenburg & Carandang

ISSN # 2329-7336

Hoya bebsguevarrae Kloppenburg & Carandang sp. nova holotypus 71846 (CAHUP) hic designatus. Epiphytica, volubilis, scandens, ramosa; caule ramisque filiformibus elongatis, flexuosis, teretibus, glabris, laxe foliatis; foliis; ellipticis vel ovato-ellipticis acuminatis, glabris, textura crasse coriaceis, plinervis conspicuis, 7.8-14.1 cm longis, medio vel infra medium 3.2-5.0 cm latis, petiolo brevi carnoso; cymis Umbelliformibus multifloris, rhachis demum cylindrica elongata, pedicellis filiformibus gracilibus, glabris, 2.0 cm longis; calycis segmentis triangularis obtusis glabris, 0.15 cm longis; corolla usque infra medium 5-fida rotata, extus glabra, intus minutissime et aequaliter puberulosa, circ. 1.44 cm diametiente complinatus, lobis late ovatis, acutis, cire. 0.34 cm longis; coronae foliolis subhorizontalibus, interior apice dentatus, dorso concavus, superne usque infra, apicem logitudinaliter carinatis, subtus canaliculatus. Species similes in aliquot respectus ad *Hoya benvergarae* Kloppenburg & Siar 2008, pollinia 0.35 mm longus, translatorus typus p/o et alae antherarum apiculatus quadratus, sed differt aliter.

A twining epiphyte, climbing branched, stalks and branches threadlike elongate, flexible round and glabrous; loosely leaved, with the leaves elliptical or ovate elliptical, acuminate, glabrous, with thick coriaceous texture, plinerved which are very conspicuous, 7.8 – 14.1 cm long in the middle 3.2 – 5.0 cm wide, petiole short and fleshy, the cymes shaped like umbels of many flowers, with the rachis at last cylindrical, elongate, the pedicels threadlike slender, glabrous, 2.0 cm long; the segments of the calyx are triangular obtuse, glabrous, 0.15 cm long; corolla 5 lobed all the way to below the middle, rotate, outside glabrous, inside evenly puberulous, about 1.44 cm in diameter flattened, lobes broadly ovate, acute, about 0.34 cm long; with the corona scales somewhat horizontal, inner apex dentate, with the dorsal concave, above longitudinally keeled all the way from back of the tip and channeled below.

This new hoya species is named for Maria Luisa D. Guevarra, she is the lady who took over the projects of the late Dr. Monina Siar and now a part of the Hoya Group. Her training is in plant breeding with a basic knowledge of botany/taxonomy. She is a University Researcher, at the Fruit and Ornamental Crops Section, Crop Science Cluster. Institute of Plant Breeding, College of Agriculture, University of the Philippines in Los Banos (UPLB), Laguna, Philippines. She has been exceedingly helpful in sending me new hoya materials along with supporting data and photos. She is known as Bebs.



Pedicel: section enlarged ca. 56x. Glabrous, strict, terete, 2.0 cm long x 0.07 cm in diameter.

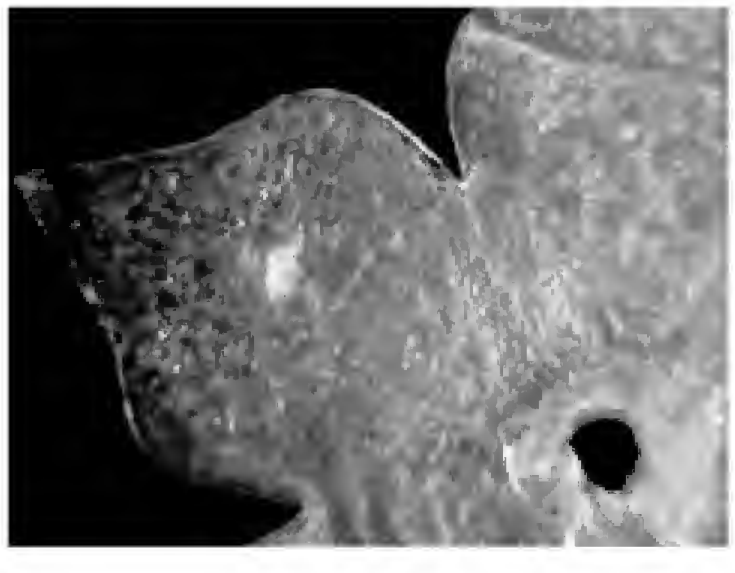
Calyx: outside surface enlarged ca. 22x. Surface is granulate, thickened centrally, pedicel not expanded at base. 0.15 cm long x 0.10 cm. widest, apex sub-acute.

Calyx inside view enlarged as above. Inner surface is slick and glabrous, base with very small ligules, overlap ¼ at base, outer apex narrowly obtuse.

Ovaries: Columnar, glabrous, 0.12 cm tall and base pair 0.10 cm wide.

Corolla: ventral surface enlarged ca. 10x. Surface is glabrous, lobe apices are acute, and the center thickened.

Sinus – sinus	0.40 cm
Sinus – center	0.33 cm
Sinus – apex	0.50 cm
Apex – center	0.72 cm
Widest	0.47 cm



Corolla dorsal surface enlarged as above. Surface is evenly puberulous.

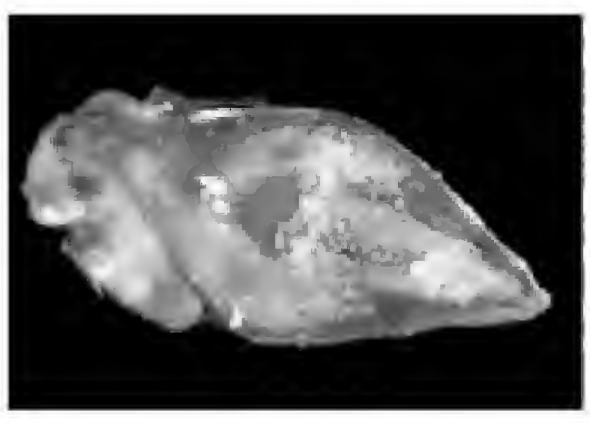
Corona: ventral surface enlarged ca. 10x. Surfaces are glabrous, lobes are channeled evenly to near the central column, lobe apices are acute, anther wings apices protrude and with squared off ends, column area appears to be glabrous.

Corona dorsal surface enlarged ca. 9x, horizontal position.

Apex – apex	0.33 cm
Apex – center	0.38 cm
Widest	0.17 cm
Ret. – ret.	0.11 cm
Ret. – center	0.10 cm
Aw. - aw.	0.21 cm
Aw. – aw.	0.19 cm

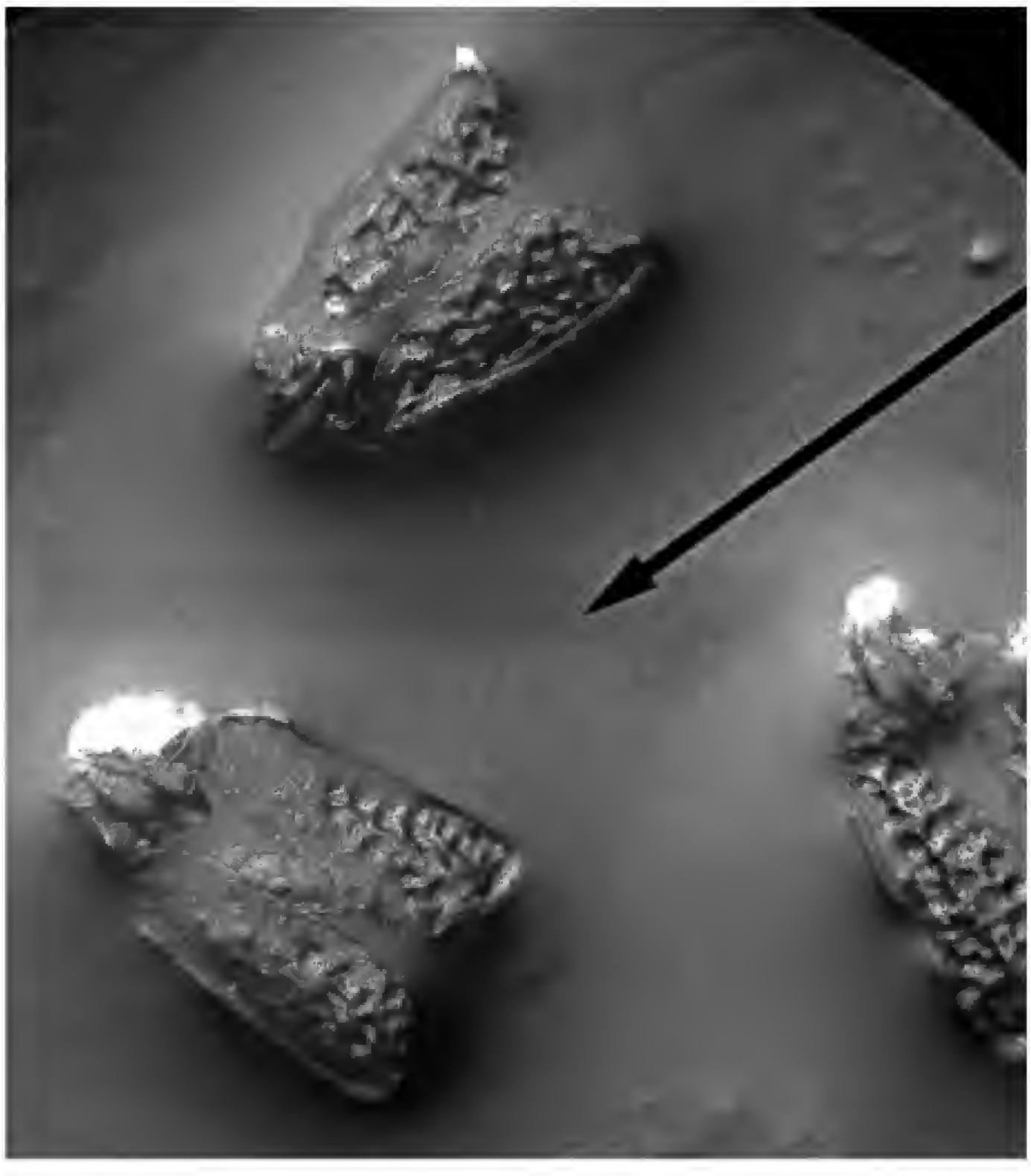
Inner lobe is dentate, dorsal is concave with forward umbo and keel to acute outer apex, edges are rounded, retinacula and anther wings plainly visible.

Coronal scale ventral surface enlarged ca. 20x. Lobe is channeled evenly to near the center sides rolled under diagonally sulcate, apex acute. Anther wing is deeply scythe shaped (showing above right).



Coronal lobe dorsal view enlarged as above. Inner apex does not reach the center is dentate, dorsal in concave with forward umbo, rounded keel extends down enter to outer apes, edges are rounded, outer apex acute, surfaces glabrous.

Coronal lobe side view enlarged as above, scale is horizontal, relatively thin, glabrous with deep scythe shaped anther wing. Anthers above inner apex of corona.



Pollinarium enlarged ca. 100x.

Pollinium

length	0.35 mm
widest	0.12 mm

Retinaculum

length	0.10 mm
shoulder	0.08 mm
waist	0.06 mm
hip	0.07 mm
ext.	0.05 mm

Translator **Translator type:** p/o

length	0.08 mm
depth	0.02 mm

Caudicle

bulb diam.	0.05 mm

2012-4-031
Date of Collection: February 29, 2012
Place of Collection: Real, Quezon
Collectors: MLD Guevarra & JM Carandang

2012-4-031

Leaf sample	Length (cm)	Width (cm)	Thickness (cm)
1	12.6	5.0	0.170
2	10.6	4.5	0.210
3	9.9	3.2	0.235
4	9.9	4.7	0.190
5	10.2	4.7	0.190
6	8.4	3.8	0.285
7	14.1	4.9	0.205
8	11.0	4.5	0.185
9	10.1	4.7	0.150
10	7.8	3.8	0.130
Mean	**10.46**	**4.38**	**0.195**
Range	**7.8 -14.1**	**3.2 – 5.0**	**0.130 – 2.85**

20-flowers

10 flowers

Leaves are petiolate, opposite ovate-elliptic, base obtuse to sub-cordate apex short acute, nerves plinerved, anastomosing with nerve angle to the midrib ca. 18° or less and lighter colored than the leaf surface, dorsal convex, edges entire.

References:

1. Kloppenburg R.D. 2012. *Hoya bicolensis*.
2. Kloppenburg R.D. *Hoya bicolor* in Fraterna V.16 #1 2003:1-4.

Contributors:

Jennelyn M. Carandang University Research Associate, Crop Science Cluster-Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkley, plant genetics, Lt. USNR, Plant Breeder, Research Agronomist, now Taxonomy of Genus Hoya.

Collection number: 2012-4-031, 10 flowers in zip bag. 15 May 2012 (c/o MLD Guevara)

Holotype sheet 71846 (CAHUP)

ISSN # 2329-7336

Hoya celsa Kloppenburg, Siar, Guevarra, Cajano & Carandang sp. nova, holoypus 71840 (CAHUP). Section Acanthostemma (Blume) Kloppenburg. Calycis segmentis ovato-oblongis, obtusis, glabris, 0.11cm longis et 0.12 cm latis; corolla recurva 1.00 cm diametro complanatus, intus medio anulo paulo incrassato, glabro, 5-lobulato ornato, extus glabra, intus apicibus exceptis, dense pubescenta, lobis ovatis acutis; coronae foliolis carnosis, apicem contrastre adscendentious spatulata, superne lanceolatis, basi caniculatis, dorso medio carinatus, antheris trapezoideis, appendice hyalina ovata acuta; bilobus corollae sinus attigens. Retinaculum proximus coronae apices.

This new species is in the section Acanthostemma (bilobed coronal lobes) the sepals are ovate-oblong obtuse, glabrous 0.11 cm long and 0.12 wide; the corolla is recurved 1.00 cm in diameter flattened, outside is glabrous, inside except the apical apex densely pubescent; lobes of the corona with the inner lobes raised, spatulate with a central keel on the dorsal surface, anthers are trapezoid, thin ovate with an acute apex bilobes reach the corolla sinuses. The retinaculum is near the corona apex. (this last character makes it different from any other bilobed hoya species I am familiar with).

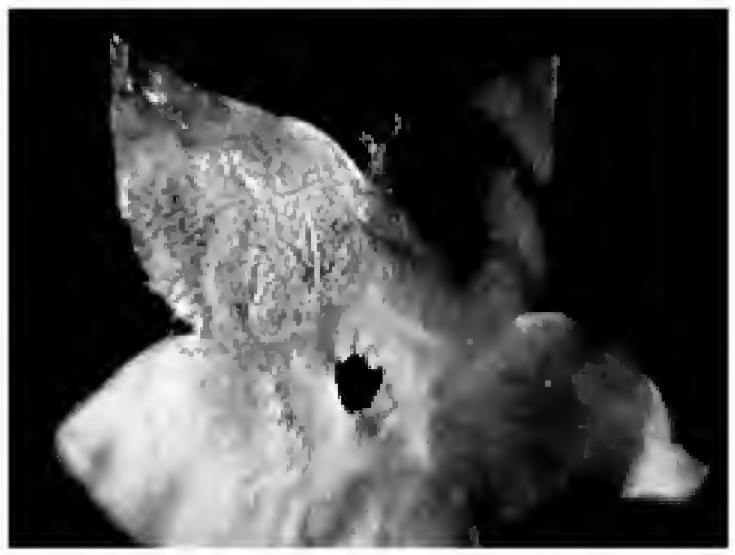
Photomicrographs and data below:

Pedicel: enlarged ca. 35x. Filiform, strict, terete, glabrous 1.0 cm long and 0.08 cm in diameter.

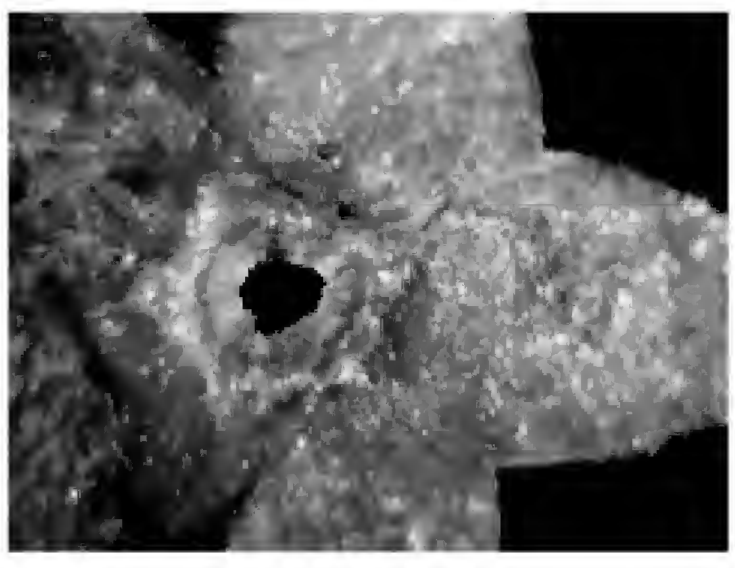
Flower outside view with pedicel and calyx, enlarged ca 18x. Corolla outside is glabrous, sepals are elliptic and ¾ way to the corolla sinuses.

Calyx: side view enlarged ca. 20x, ligules are present, 2-1 pattern. Sepals glabrous, 0.11 cm long and 012 cm at the widest, apex narrowly obtuse, a little basal overlap.

Ovaries: here shriveled, columnar 0.14 cm long and base pair 0.07 cm wide, glabrous.



Corolla: outside view enlarged ca. 12x, glabrous, cut more than half way, showing through is a raised pentagonal line on inner surface around the central column. Apex of lobes acute, broadest just outward from the sinuses. Corolla is revolute.

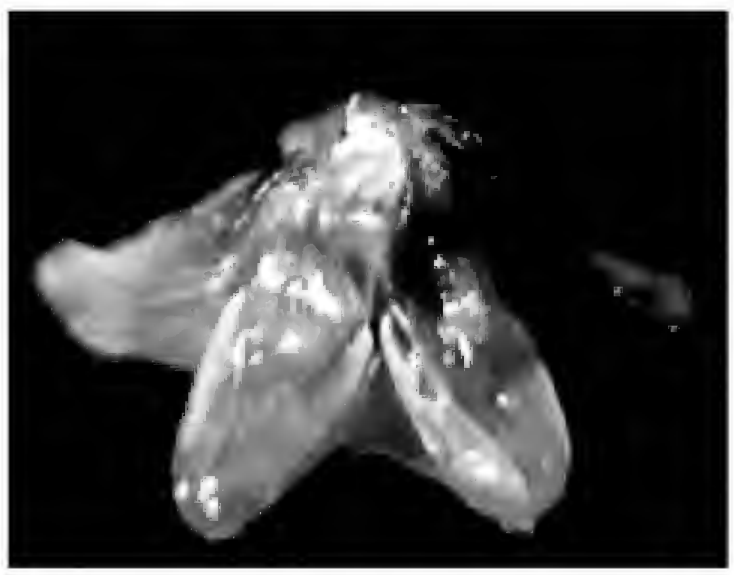


Corolla inside view enlarged ca. 20x. This surface is densely pubescent except for lobe apex area (0.07 cm long), even the pentagonal raised surface is covered with indumentum.

Sinus – sinus	0.25 cm
Sinus – center	0.20 cm
Sinus – apex	0.35 cm
Apex – center	0.50 cm
Widest	0.27 cm

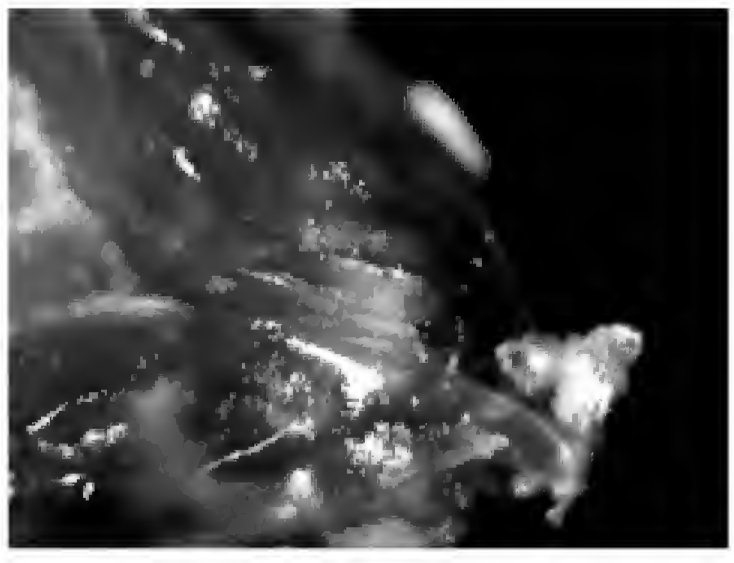
Side view of a flower enlarged ca. 14x. Corona is bi-lobed, inner apex is raised, outer lobes reach the corolla sinuses, corolla is revolute, typical of Section Acanthostemma species. Anthers showing at top center are covered by inner apices but still protrude.

Corona: bottom view enlarged ca. 20x. The lobes are channeled, edges rolled under all the way to the central column which is hirsute, lobe apices turn under slightly.



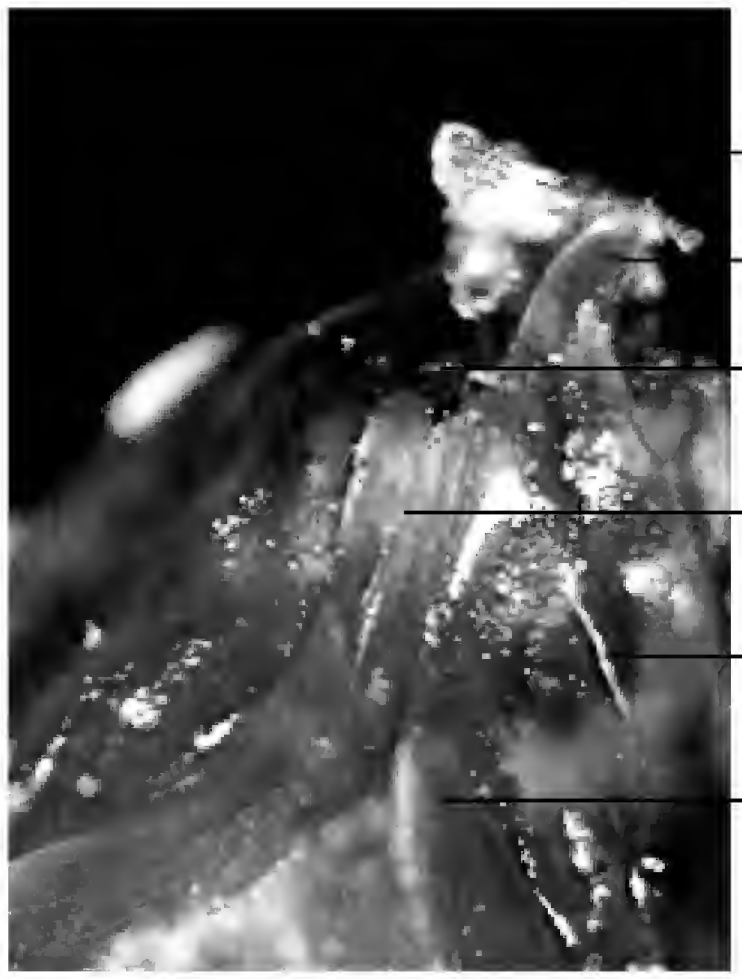
Side view of the corona enlarged ca. 25x. The inner lobes are long spatulate with the ends curved over the central anthers, dorsal is centrally keeled. Bi-lobes flat toped along the sides but turned sideways to meet at there apices and curved up slightly.

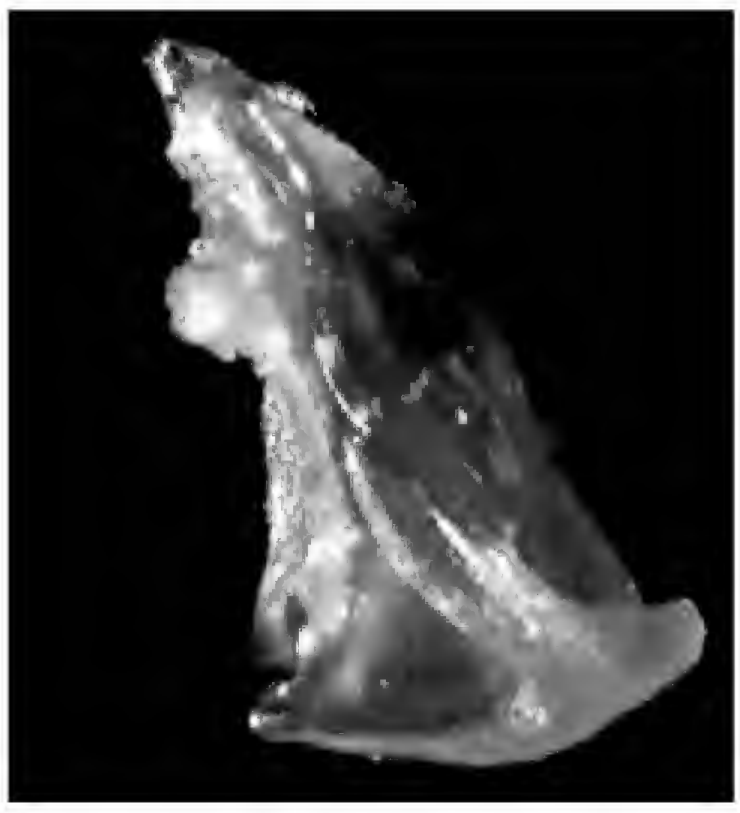
Apex – apex	0.18 cm
Apex – end	0.21 cm
Widest (dorsal)	0.07 cm
Wide/ bi-lone	0.10 cm



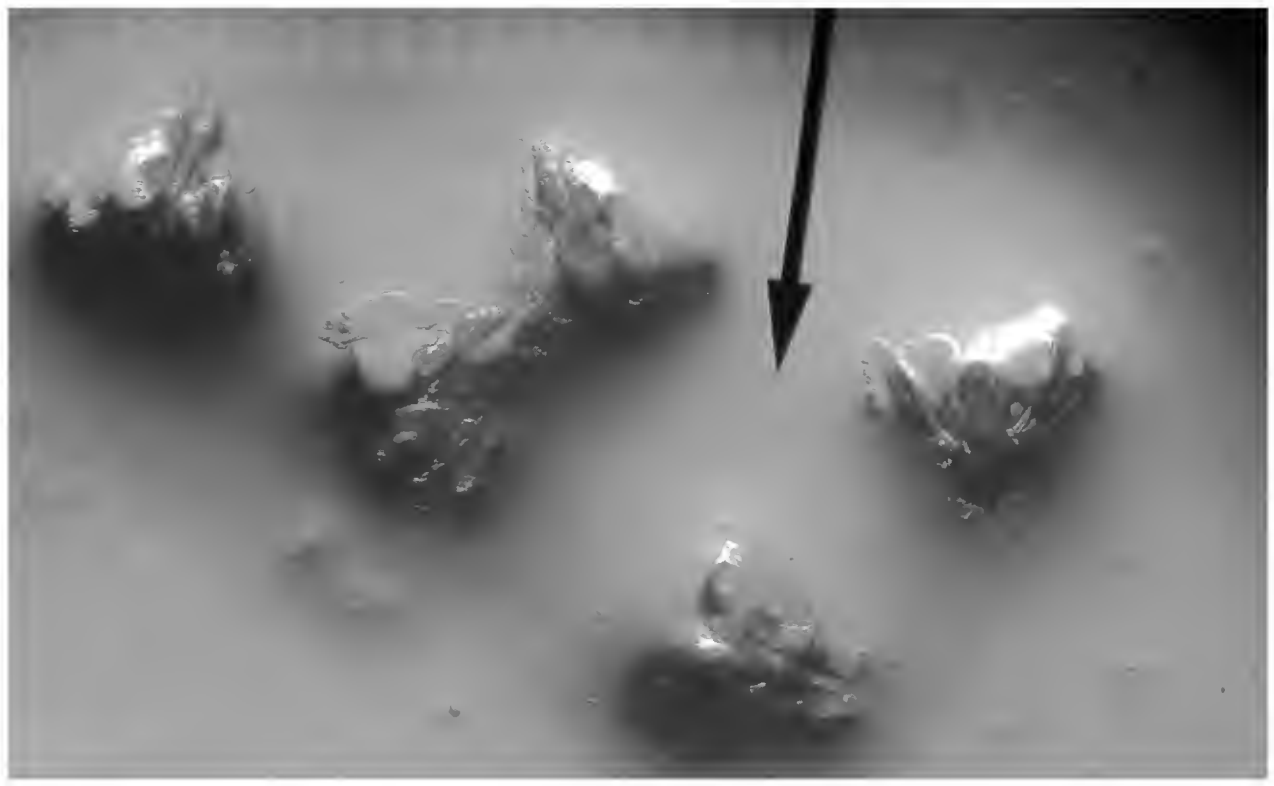
Side ways view of the coronal apex to show a most unusual character of this species greatly enlarged. To the right lower center is the protruding white anther, and just below is the narrow apex of the inner coronal lobe apex. Noteworthy is the dark retinaculum to the left of the white anther, it is unusually high up near the flower center (Thus its name "**celsa**"), visible to the left is the long anther wing channel, proceeding past the sides of the coronal lobe.

Detail of this unusual positioning of the retinaculum. On labeled picture:





Side view of a coronal scale enlarged ca. 43x. Inner lobe apex at top turns over the anthers, the anthers actually protrude between the inner lobes. Lobe ends between the bi-lobes, here bi-lobes are turned up slightly past the outer lobe apex.



None of the pollinia were attached to the retinacula. The translators are typical of the Section Acanthostemma.

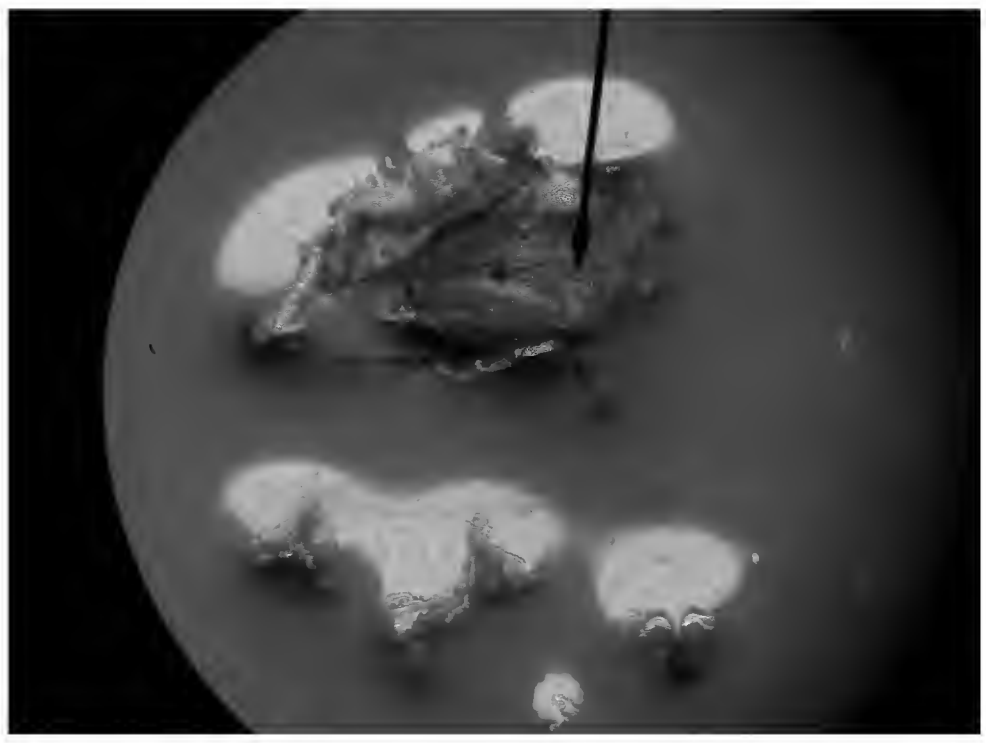
Retinaculum

length	0.12 mm
shoulder	0.09 mm
waist	0.06 mm
hip	0.09 mm
ext.	0.09 mm

Translator

length	0.18 mm
depth	0.05 mm

Translator/caudicle type: fb/cw



In this photo of the retinacula with pollinia (2) it is difficult to determine the precise measurements but here is my best estimate.

length	0.26 mm
widest	0.10 mm

Leaf sample	Length (cm)	Width (cm)	Thickness (cm)
1	4.4	1.6	0.145
2	4.8	1.5	0.170
3	3.9	1.9	0.130
4	4.4	1.8	0.120
5	4.2	1.9	0.120
6	3.9	1.6	0.135
7	4.3	1.5	0.150
8	4.6	1.9	0.130
9	4.5	1.7	0.120
10	7.0	2.0	0.140
Mean	**4.6**	**1.7**	**0.136**
Range	***3.9-7.0***	***1.5-2.0***	***0.120-0.170***

Leaves: opposite, petiolate, glabrous, elliptic, base narrowly obtuse to cuneate, apex long acute, nerves indistinct but pinnate.

References:

1. **Philippine Section Acanthostemma Hoya Species** by Dale Kloppenburg, 240 pp..
2. **Species in Subsections of Acanthostemma** by Dale Kloppenburg, illustrated 76 pp.

Contributors:

Ms. Mary Ann Cajano is the Herbarium Associate at (UPLB) University of the Philippines, Los Banos, Laguna, Philippines.

Ms. Jennelyn M. Carandang, University Researcher Associate, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

Maria Luisa D. Guevarra, University Researcher, Fruit and Ornamental Crops Section, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos, Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkley, plant genetics, Lt. USNR, Plant Breeder and Research Agronomist, now taxonomist of Genus Hoya.

Dr. Simeona "Monina" V. Siar former University Researcher at the Institute of Plant Breeding-Crop Science Cluster, University of the Philippines, Los Banos, Laguna Philippines. She Helped me (Dale Kloppenburg) greatly for years with hoya species, we all miss her. She died 19 December 2011.

Hoya celsa
Holotype CAHUP 71840

Hoya chiekoae Kloppenburg, Ferreras & Mendoza

ISSN # 2329-7336

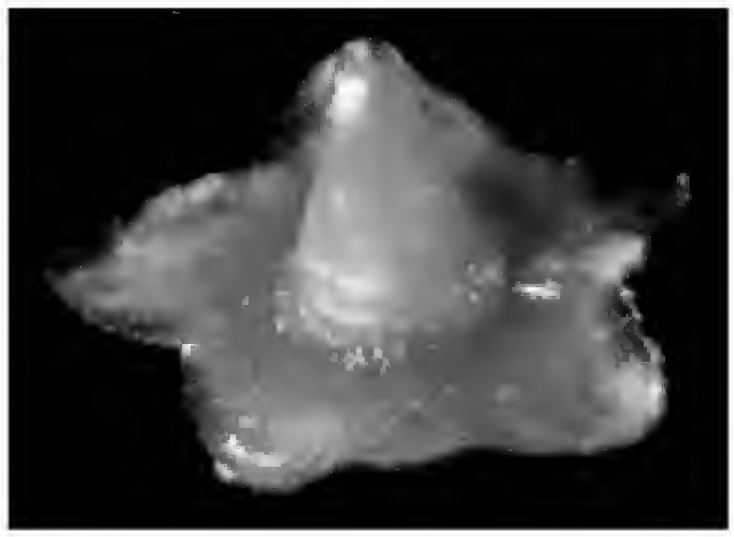
Hoya chiekoae Kloppenburg, Ferreras & Mendoza sp. nova, holotypus #14628 (PUH) hic designatus. Epiphytica in truncis ramisque arborum, alts scandens, ramosa; ramis ramulisque filiformibus, flexuosis, teretibus, glabris, laxe foliatis, radicantibus; foliis patentibus patulisve elliptico lanceolatis acuminatis, basi sensim in petiolum cuniatis, utrinque glabris, textura crassiuscule coriaceis, 4.5—7 cm longis, medio fere 1.3—2.2 cm latis, petiolo ca. 0.7 cm longo; pedicellis filiformibus, ca. 2.3 cm longis, glabris; umbella 10—20 flora; calycis segmentis ovato-oblongis, obtusis, glabris, longitudine vix; 0.14 cm excedentibus; corolla recurva, usque infra medium 5-lobata, extus glabra, intus apicibus exceptis, minute et dense puberula, lobis ovatis acutis, margine minute ciliatis; coronae foliolis carnosis, superne triangulartus, basi breviter excisis, medio rhomboideo-applanatis, apice spatulatus; antheris trapezoideis, appendice hyalina ovata acuta; retinaculo rhomboideo minuto. Hoya Section Acanthostemma Kloppenburg, similes *Hoya wayetii* Kloppenburg 1993 sed corolla parviorum 1.40 cm diametriente complanatus contrastre 1.60 cm; coronae folia itidem parviorum 0.25 cm longis (apex – apex) 0.25 cm contrastre 0.38 cm; retinaculum multus breviorum 0.10 mm contrastre 0.16 mm, differt.

This new Philippine hoya species is named for George Mendoza's mother Chieko who at this time is 82 years old. In some respects this new hoya species is closest to *Hoya wayetii* Kloppenburg both of which are bilobed species thus in the Section Acanthostemma Kloppenburg but this species corolla flattened is smaller 1.40 cm in diameter versus 1.60 cm, likewise the coronal lobes are shorter (apex to apex) 0.25 cm versus 0.38 cm; there are differences in the pollinarium also, for one thing the retinaculum is much shorter 0.10 mm long compared to 0.16 mm. There so far about 20 species that have bulbous protrusions from the central coronal column (ventral surface) this species is unique in having the projections align with the lobe channel as to extend this channel to the column. Below are microphotographs with measurements and details.

Peduncle: is 4.8 cm long, 0.07 cm in diameter.

Pedicel: Enlarged ca. 21x, **c**urved, terete, glabrous, 2.3 cm long, 0.11 cm in diameter, rose colored, uniform, slick but very finely granulate, at the calyx base it is bulbous and 0.23 cm in diameter.

Calyx: side view enlarged ca. 16x. Sepals are short, 0.14 cm long, 0.15 cm at the widest, 1/3 overlap, glabrous on both surfaces.

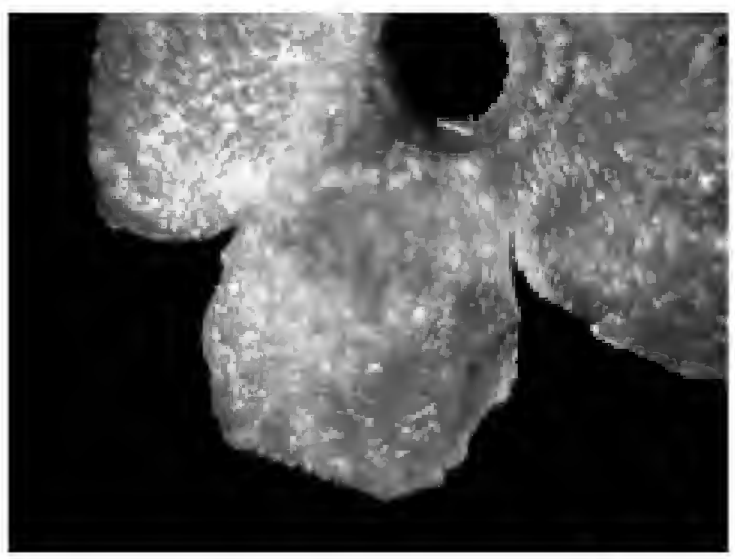


Calyx: top view (dorsal) enlarged ca. 21x. Long narrow ligulas are present at the sinuses, edges of the sepals are slightly ragged. Sepals are sub round with an obtuse apex.

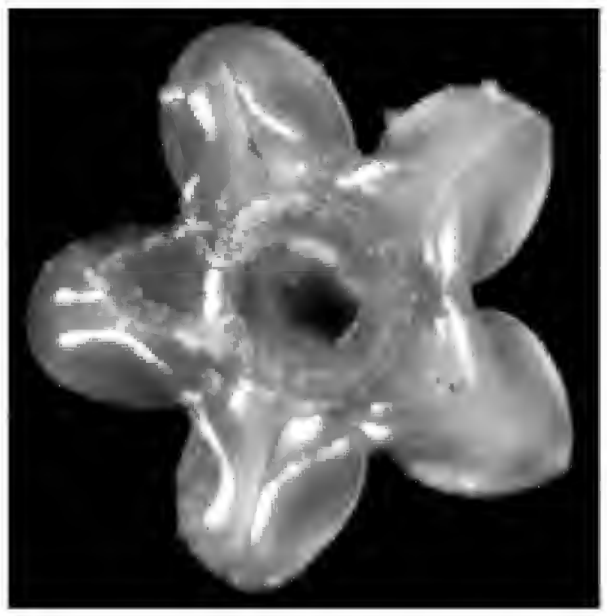
Ovaries: dome shaped, glabrous, 0.15 cm tall and base pair 0.10 cm wide.

Corolla: ventral surface enlarged ca. 18x. The corolla is revolute as other Acanthostemma species are, this surface is glabrous and shiny. Apical ends rolled under above are glabrous.

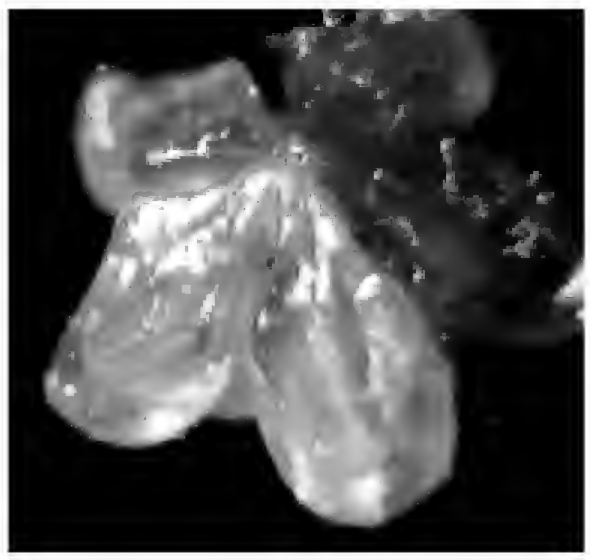
Sinus – sinus	0.30 cm
Sinus – center	0.25 cm
Sinus – apex	0.55 cm
Apex – center	0.70 cm
Widest	0.35 cm



Dorsal surface of the corolla enlarged as above, this surface is pubescent all over except the apical ends. Slight pentagonal thickening around the center.



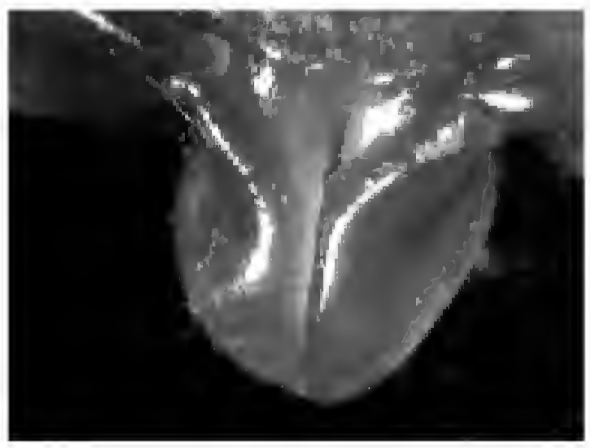
Corona: ventral view enlarged ca. 18x. The lobes are channeled with the edges rolled under. There are two bulbous projections from the central column that join at their center to extend to the channel centrally. Surfaces are glabrous.



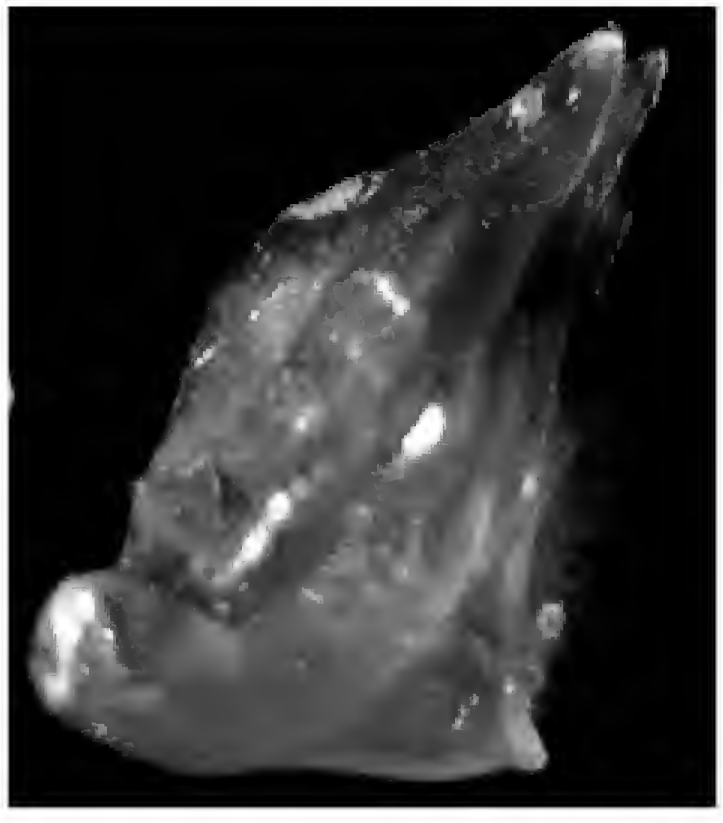
Dorsal view of the corona enlarged as above. Surfaces are glabrous, inner lobes are spatulate, raised and touch in the center, there is a low keel all the way from the inner apex to outer lobe apex, lobe surface is slightly concave. Lobe are somewhat diamond shaped. Bilobes extend along the sides, edges are rounded and touch at their outer apices. The anther wings have thick sides and do not project beyond the sinuses.

A section of the ventral coronal lobe showing the rather rare type bulbous projections from the central column that continue the channel inward (centrally).

Apex – apex	0.25 cm
Apex – end	0.28 cm
Widest	0.12 cm
Ret. – ret.	0.07 cm
Ret. – center	0.09 cm
Aw. – Aw.	0.19 cm
Aw. – center	0.19 cm

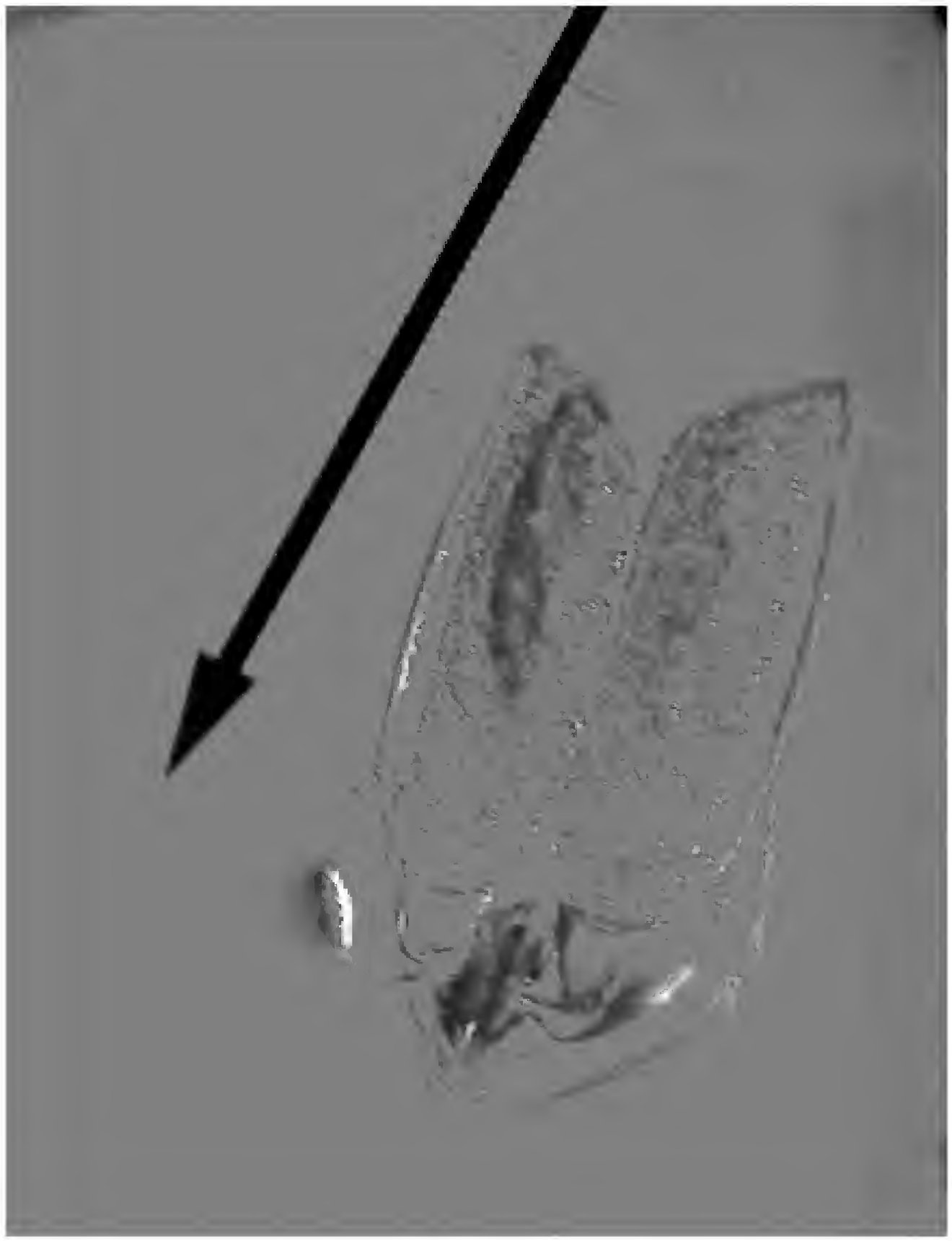


As above to further show the channel extension centrally (center top of photo). The sides of the lobes are sulcate and note how the lobe edges forming the channel are rolled under.



Coronal scale side view enlarged ca. 36x.

Inner spatulate lobes actually cover the anther so it does not show from above, here a little below the inner lobe. Bi-lobes extend with rounded sides, beyond the ends if the lobe, and meet at their apices, an anther wing edge showing at lower right side does not curve much (it is not scythe shaped).



Translator/caudicle type: fb/cw

Pollinarium:
Enlarged ca. 160x.

Pollinium
length 0.45 mm
widest 0.14 mm

Retinaculum
length 0.10 mm
shoulder 0.06 mm
waist 0.05 mm
hip 0.06 mm
ext. 0.03 mm

Translators
length 0.20 mm
depth 0.03 mm

Caudicle
bulb diam.0.07 mm

Translators should most likely be classified as perpendicular “p”.

Ratios:p/ret 4.5
p/w 3.2

Foliage: Opposite**,** petiolate, glabrous, linear, thick, enervis, base cuneate apex short acute dorsal concave. Leaf measurements below in centimeters.

UF 901	Leaf 1	Leaf 2	Leaf 3
Leaf Length	9.5	6	12
Leaf Width	1.5	2	1.6
Petiole	1.5	0.9	1.3
Peduncle	6.5		
Stem Diameter	0.2		

Pictures below from George Mendoza via E-mail, 3 August 2011. Cluster of 16 flowers stay open more than a week.

Contributors:

Ulysses Ferreras, botanist, plant collector, plant taxonomist.

Dale Kloppenburg retired: Graduate of UC Berkeley, plant genetics, Lt. USNR, Plant Breeder and Research Agronomist, now taxonomist of Genus Hoya.

George Mendoza, Landscape Artist, Nurseryman and Plant Explorer from Quezon City, Philippines, visit his web site www.forest-treasures.com.

References:

1. **Philippine Section Acanthostemma Hoya species.** Description of 30 species, and with tables, 240 pages.

2. **Rumphia** 4 (1848) 49-50. In Museum Botanicum Lugduno-Batavum 1 (1849) 57.

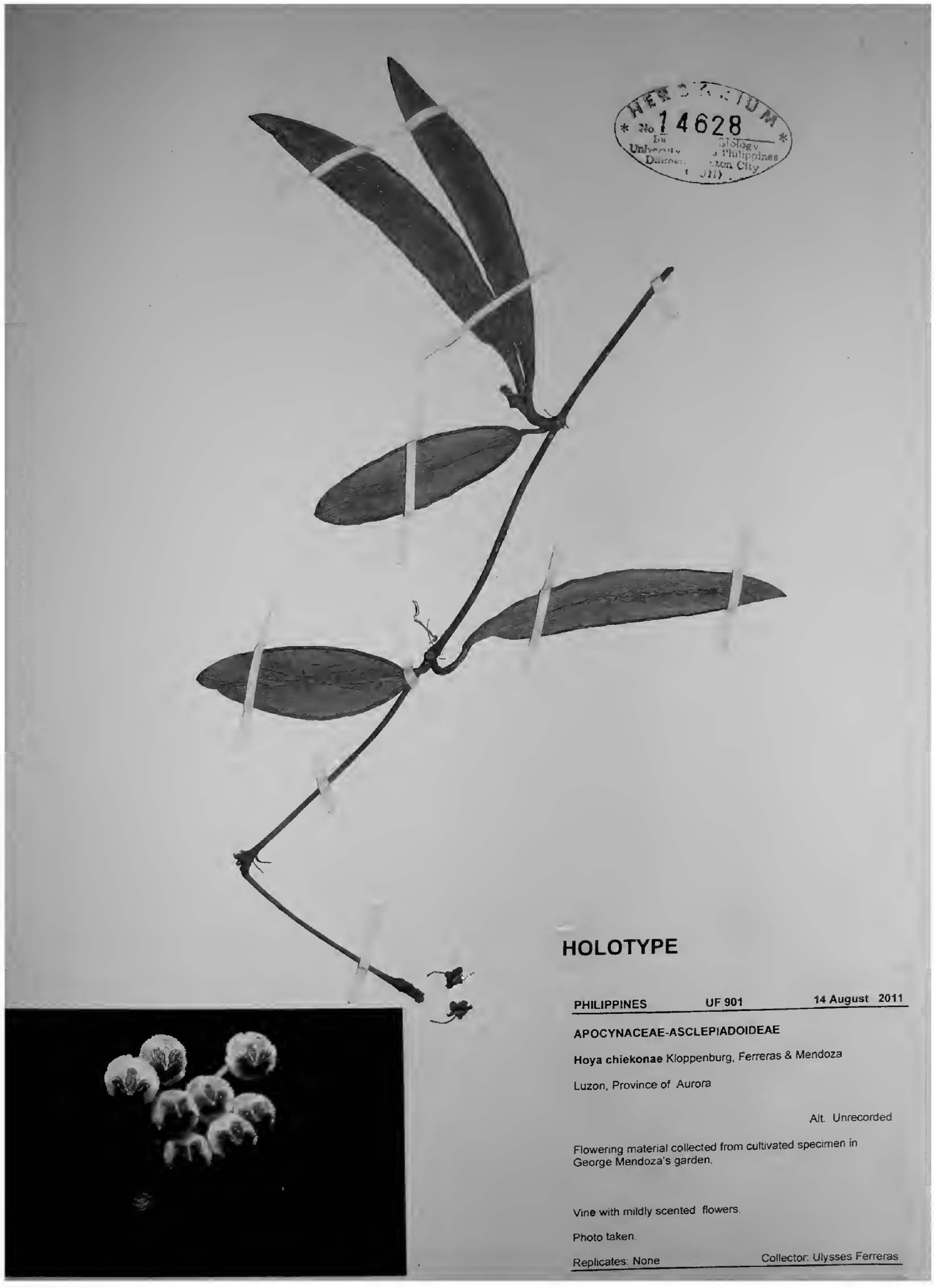
3. **Dr. Schlechter's Hoya species** by Dale Kloppenburg 6427 N. Fruit Ave. Fresno CA 93711 Copyright 1993 © All rights reserved. ORCHA Pub. Co. 65 pages.

4. **Hoya carmelae** Kloppenburg & Ferreras, Fraterna Vol. 23 #4, 9-13:2010.

5. **Hoya corazoniae** Kloppenburg, Siar & Ferreras, Fraterna Vol. 23 #4, 15-19: 2010.

6. **Hoya kanaloensis** Kloppenburg, Siar & Ferreras, Fraterna Vol. 23 #4. 24-27: 2010.

7. **Philippine Hoya Species** by Dale Kloppenburg, Eleventh edition revised September 2009 704 pages



The above sheet was prepared and made by Ulysses Ferreras and deposited at (PUH) Photo of Holotype sheet sent by e-mail from Ulysses.

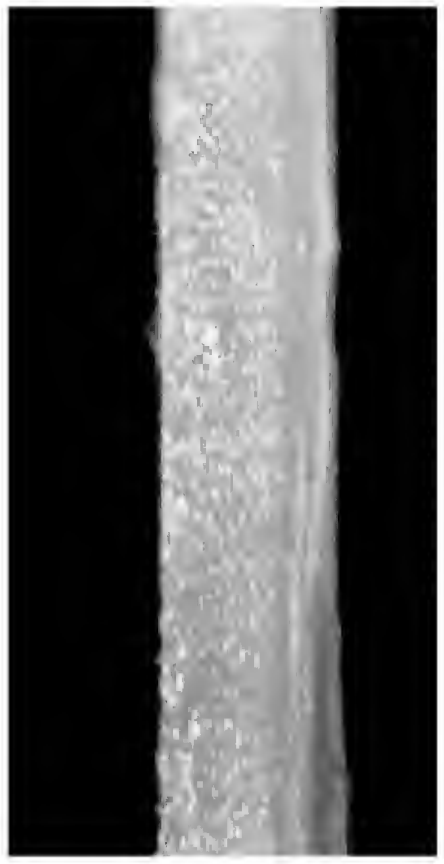
Hoya unruhiana Kloppenburg, Siar, Mendoza, Cajano & Carandang

ISSN # 2329-7336

Hoya unruhiana Kloppenburg, Siar, Mendoza, Cajano & Carandang species nova, Typus 71807 (CAHUP) hic designatus, differt ab omnis parvus pollininaria Hoya species. Frutex scandens, inflorescentiis exceptis glabra, ramis teretibus, folliis carnosis oblongo-ovbovatis, 11.2 cm longis, 3.4 cm latis, glabris, basi subobtusis, apice acuminatis, triplinervis, petiole ca. 1.5 cm longo, pedunculo ca. 12 cm longo, umbelliformibus globosum, pedicillis gracilibus filiformibus 1.2 cm longis 0.06 cm diametiente, calyces segmentis ovatis, subobtusis, glabris ca. 0.11 cm longis et 0.08 cm latis, sin ligulae; corolla rotata, ca. 0.74 cm diametro complanatus, usque infra medium, 5 lobata, extus glabram, intus uniformiter pubescebte; coronae lobis anteriore dentatis, posteriore erecta, obtusis, subtus usque ad basin canaliculatis, supra concavis, medio carnaeus, 0.14 cm longis.

This new species has very short pollinia ca. 0.25 mm with translators different from other hoya species with short pollinia. This is a climbing plant glabrous all over except for the inflorescence, stems are round, leaves fleshy oblong-obovate 11.2 cm long and 3.4 cm wide, glabrous, base sub-obtuse with the apex acuminate, triplinerved, peduncle about 1.5 cm long, peduncles about 12 cm long; flower clusters globose, the pedicels are fine filiform 1.2 cm long and 0.06 cm in diameter, the sepals are ovate apex sub obtuse, glabrous about 0.11 cm long and 0.08 cm widest, no ligules observed; corolla is rotate about 0.74 cm in diameter flattened, cut to below the middle, 5 lobed, outside glabrous inside uniformly pubescent; lobes of the corona inside dentate outer lobe raised and obtuse, below channeled and above concave with a central keel. Lobes are 0.14 cm long.

Measurements and pictures of parts follow:



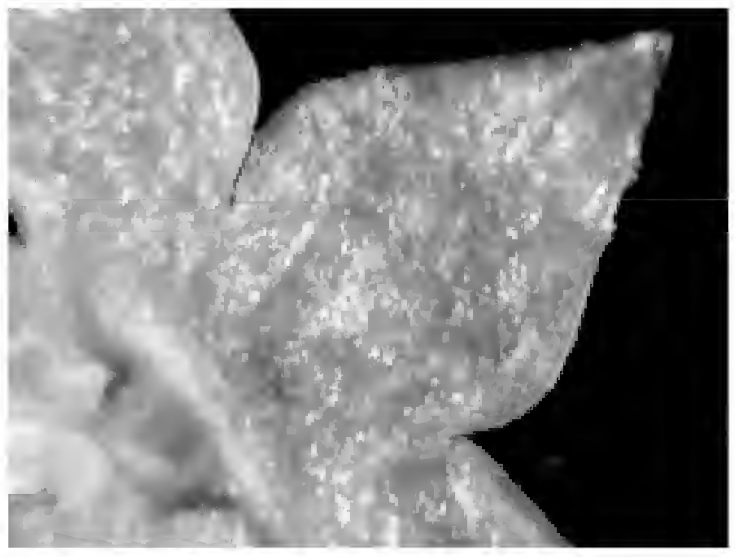
Pedicel: enlarged ca. 41x, filiform, glabrous, terete, very fine granulate lenticular surface 1.2 cm long 0.06 cm in diameter, enlarging slightly near calyx base.

Calyx: side view enlarged ca. 25x. Sepals are thin, overlap slightly at base, no ligules, surface finely granulate, extend ½ or less to the corolla sinuses; 0.11 cm long and 0.08 at the widest.

Side view of a flower enlarged ca. 18x. Corolla outside glabrous and rotate when fully open.

Sinus – sinus	0.18 cm
Sinus – center	0.14 cm
Sinus – apex	0.27 cm
Apex – center	0.37 cm
Widest	0.23 cm

Outside surface of the corolla enlarged as above, lobes are broadest just above the sinuses, surface glabrous, apex acute.



Inside surface of a corolla lobe enlarged about 20x, the surface is uniformly pubescent. To the lower left is a small portion of the corona showing.

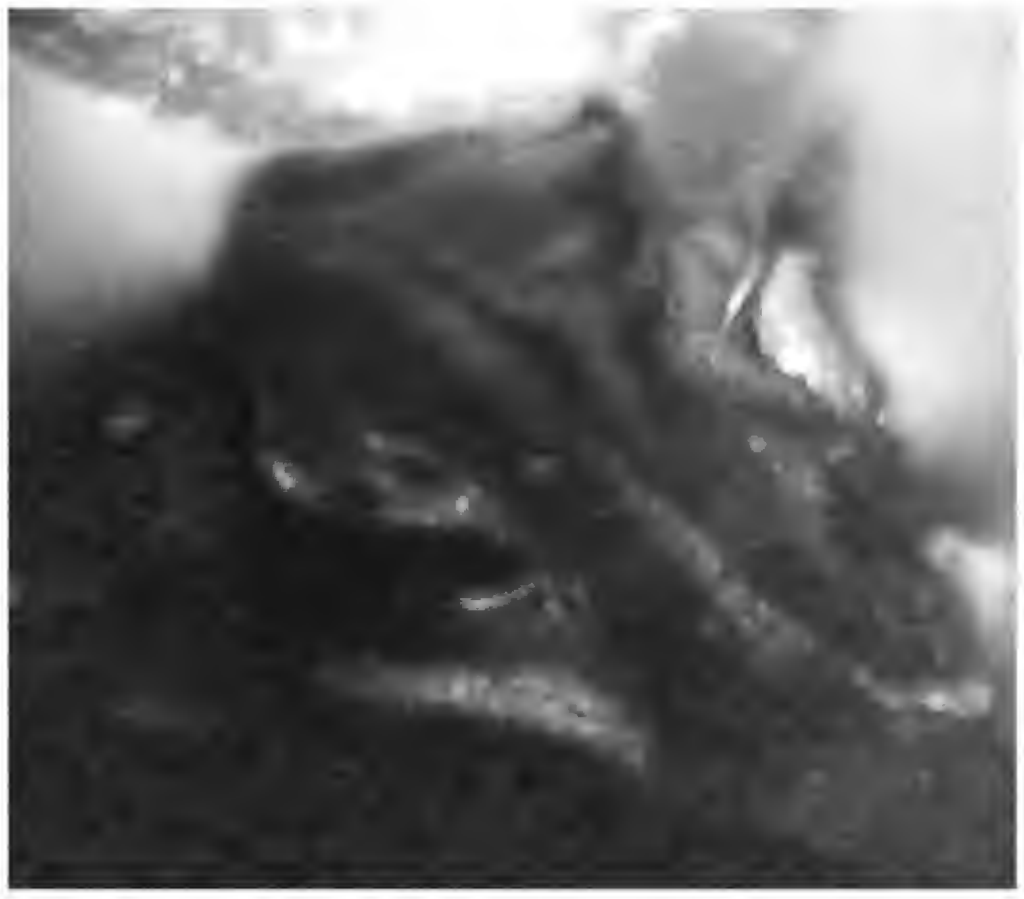
Inside view of a flower enlarged ca. 8X. The corona has outer raised lobes with a relatively long central collar, surfaces glabrous, channel on ventral plainly visible, Corolla slightly sunken under the corona.

Outside surface of the corona enlarged ca. 58x. The scale lobes are relatively thin along the edges, channeled on the visible dorsal side, apex rounded, surfaces sulcate and glabrous, anther wing apices sub acute.

Top view of the corona enlarged ca. 32x. The lobes are elliptic inner lobes dentate slightly keeled and do not cover the center, retinacula and anther wings visible from above.

Apex – apex	0.14 cm
Apex – center	0.15 cm
Widest	0.06 cm.
Ret. – ret.	0.02 cm
Ret. – center	0.02 cm
Aw. – aw.	0.06 cm
Aw. – center	0.06 cm.

View of an individual coronal scale. Outer lobe raised with a rounded (obtuse) ends the actual apex tends to turn down slightly. Dorsal is slightly concave with a low central keel and surface longitudinally sulcate, glabrous. Inner lobe raised, apex could be considered terete and end sub acute (or nearly spatulate) it is exceeded by the membranous anther.



Pollinium

length	0.24 mm
widest	0.11 mm

Retinaculum

length	0.09 mm
shoulder	0.07 mm
waist	0.04 mm
hip	0.05 mm
ext	0.02 mm

Translator

length	0.04 mm

Caudicle

bulb diam.	0.02 mm

Ratios: p/r 2.7 p/w 2.2

Translator/Caudicle type: p/o (difficult to determine in these photos but probably as indicated) most small pollinia have either lp/cw or fp/cw types. This species is unique in this respect.

Leaves: opposite, glabrous, long petiolate, elliptic, base obtuse, apex acute, plinerved, nerves lighter than the leaf surface.

This new hoya species is named for Carolyn Unruh of Kingsburg, California. She is an avid hoya grower and has since the beginning been a member of the International Hoya Society (IHA).

14. Quezon 3-125

Leaf sample	Length (cm)	Width (cm)	Thickness (cm)
1	12.6	4.2	0.175
2	13.2	4.1	0.150
3	14.2	4.1	0.135
4	14.7	3.5	0.160
5	11.1	3.5	0.185
6	13.3	3.2	0.145
7	8.9	3.0	0.145
8	7.9	2.8	0.130
9	7.5	2.8	0.135
10	8.5	2.6	0.115
Mean	**11.2**	**3.4**	**0.148**
Range	***7.5-14.7***	***2.6-4.2***	***0.115-0.185***

Notation: Hoya sp. Quezon 3-125 via Monina Siar 16 May 2011 in zip bag one flower cluster, 8 flowers. Worked up 5/27/2011 # 14.

Photos from George Mendoza, Manila, Philippines.

DSC 3901

DSC 3879

DSC 3992

Contributors:

Ms. Mary Ann Cajano is the Herbarium Associate at (UPLB) University of the Philippines, Los Banos, Laguna, Philippines.

Ms. Jennelyn M. Carandang, University Researcher Associate, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkley, plant genetics, Lt. USNR, Plant Breeder and Research Agronomist, now taxonomist of Genus Hoya.

George Mendoza, Landscape Artist, Nurseryman and Plant Explorer from Quezon City, Philippines, visit his web site www.forest-treasures.com.

Dr. Simeona "Monina" V. Siar former University Researcher at the Institute of Plant Breeding-Crop Science Cluster, University of the Philippines, Los Banos, Laguna Philippines. She Helped me (Dale Kloppenburg) greatly for years with hoya species, we all miss her. She died 19 December 2011.

References:

1. Translator Types in the Genus Hoya by Dale Kloppenburg.

2. Philippine Hoya Translator Types Illustrated in 5 parts.

3. Foliage of Hoya species By Dale Kloppenburg, modified 9/3/2010 (5 volumes).

4. Hoya Foliage by Dale Kloppenburg, 6 volumes updated10/4/2010 177 pages.

Reduced picture of Type sheet 71807 (CAHUP).

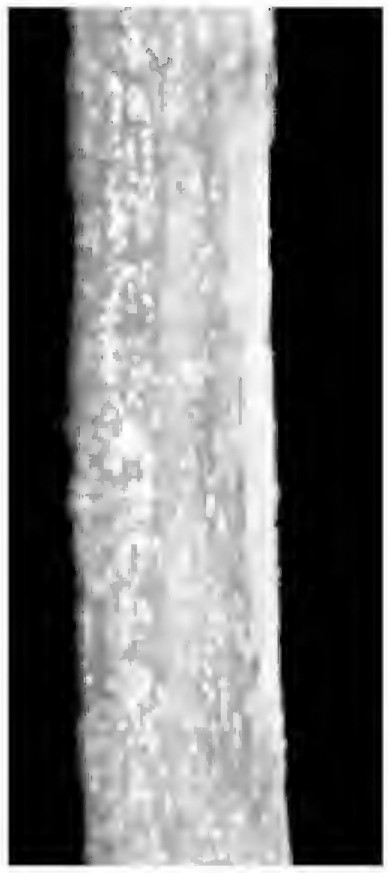
Hoya williamsiana Kloppenburg, Siar, Mendoza, Cajano, Guevarra & Carandang

ISSN # 2329-7336

Hoya williamsiana Kloppenburg, Siar, Mendoza, Cajano, Guevarra et Carandang species nova, holotypus #71852 (CAHUIP) hic designatus, differt ab omnis parvus pollinaria Hoya species. Frutex scandens, inflorescentiis exceptis glabra, ramis teretibus, folliis carnosis oblongo-obovatis, 9.6 cm longis, 3.6 cm latis, glabris, basi subobtusis, apice acuminatis, plinervis, petiolis 1.4 cm longo, umbelliformibus globosum, pedicillis gracilibus filiformibus 1.7 cm longis 0.04 cm diametiente complanatus, calyces segmentis ovatis, subobtusis, glabris ca. 0.10 cm longis et 0.06 cm latis, sin ligulae; corolla rotata, ca. 0.77 cm diametro complanatus, usque infra medium, 5 lobata, extus glabram, intus uniformiter pubescebte; coronae lobis anteriore dentatis, posteriore erecta, obtusis, subtus usque ad basin canaliculatis, supra concavis, medio carnaeus, 0.10 cm longis.

This new species has very short pollinia ca. 0.20 mm long with translators different from other hoya species. This is a climbing plant glabrous all over except for the inflorescence, stems are round, leaves fleshy elliptic 9.6 cm long and 3.6 cm wide, glabrous, base sub-obtuse with the apex acuminate, plinerved, petiole 1.4 cm long, flower clusters globose, ca. 14 flowers in a cluster; the pedicels are fine filiform 1.7 cm long and 0.06 cm in diameter, the sepals are ovate apex sub obtuse, glabrous about 0.10 cm long and 0.06 cm widest, no ligules observed; corolla is rotate about 0.77 cm in diameter flattened, cut to below the middle, 5 lobed, outside glabrous inside uniformly pubescent; lobes of the corona inside dentate outer lobe raised and obtuse, below channeled and above concave with a central keel. Lobes are 0.10 cm long.

This new species is named for Jerry Williams of Rainbow Gardens in Vista California. For years Jerry had a large greenhouse of Hoyas for propagation and sale to collectors worldwide. He was active in the International Hoya Association, publisher of Fraterna. He also collected with others in the Philippines including Palawan Island.



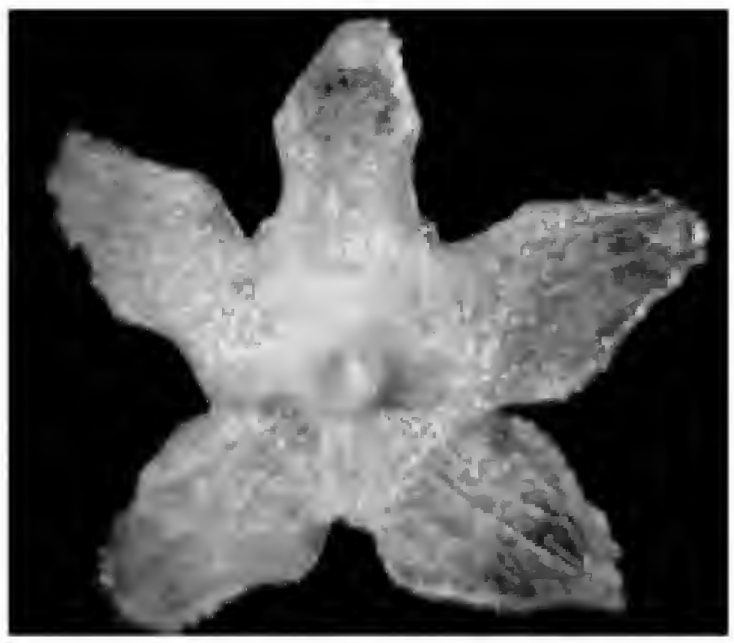
Pedicel: enlarged ca. 83x, filiform, terete, glabrous, 1.70 cm long and 0.04 cm in diameter.

Side view of the calyx enlarged ca. 35x.

Sepals: linear-triangular, glabrous, ligules present but very difficult to detect, 0.10 cm long 0.06 cm wide near base. Apex obtuse, very little overlap at base; extend just to the sinuses of the corolla.

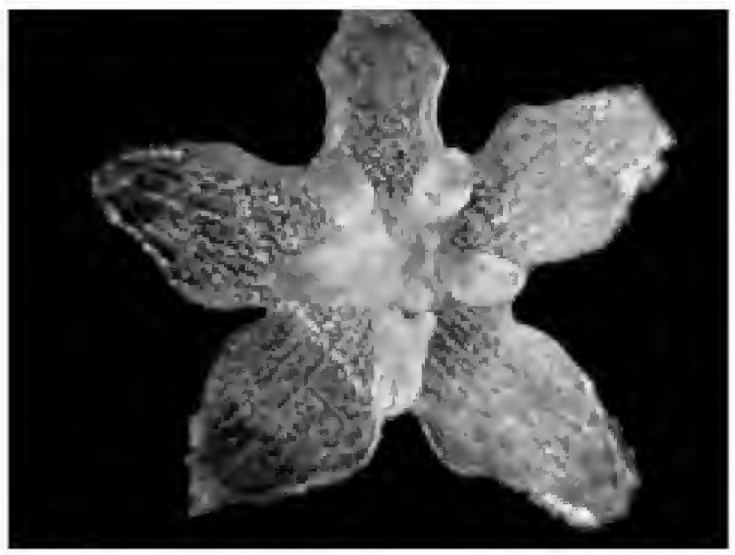
Calyx with sepals and ovaries shown enlarged as above.

Ovaries: columnar, glabrous, 0.06 cm tall and base pair 0.03 cm wide.

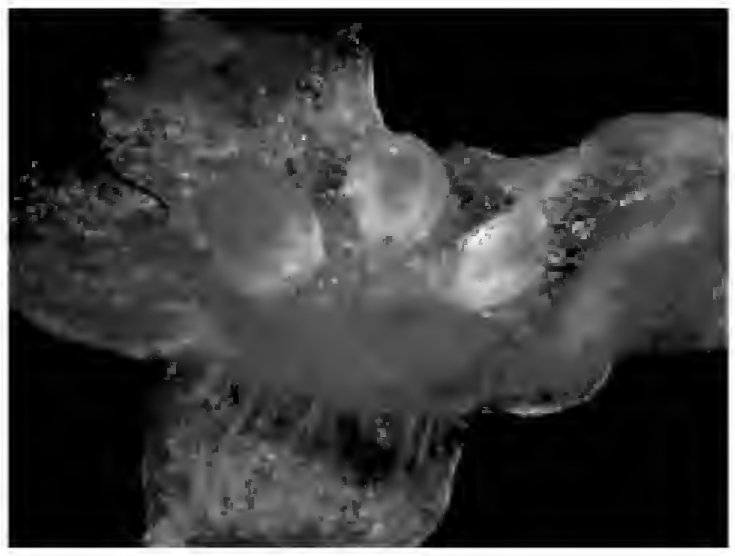


Corolla: ventral (bottom) view enlarged ca. 14x, surface is this glabrous small slightly raised central column.

Sinus – sinus	0.18 cm
Sinus – center	0.13 cm
Sinus – apex	0.26 cm
Apex – center	0.36 cm
Widest	0.20 cm

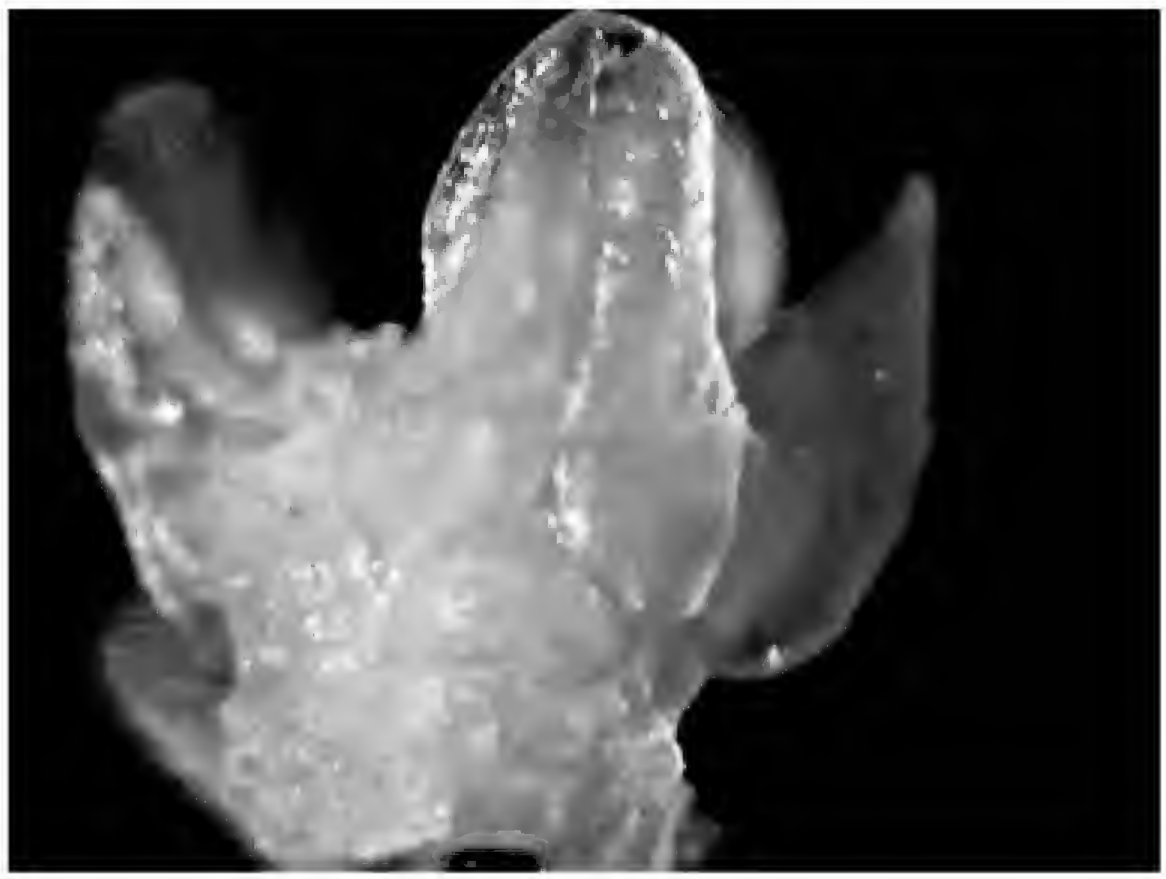


Dorsal (inside) view of flower enlarged as above. Surface with scattered pubescence. Lobes reach the corolla sinus or nearly so, elliptic shaped, outer lobe obtuse, dorsal concave and keeled down the center, inner lobe spatulate, center open, outer lobe raised. Corolla rotate edges rolled under,



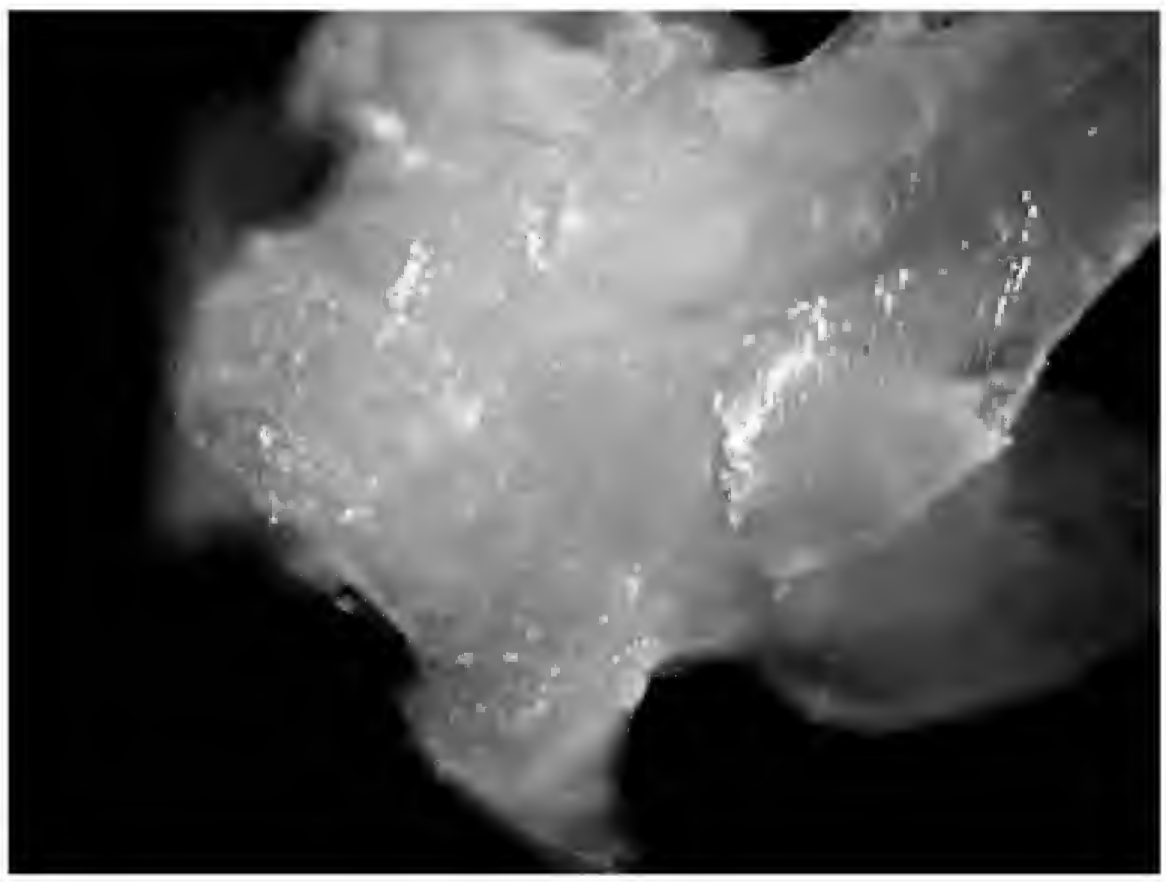
Another picture of the flower enlarged ca. ca. 20x.

Apex – apex	0.10 cm
Apex – center	0.12 cm
Widest	0.05 cm
Ret. – ret.	0.05 cm
Ret. – center	0.04 cm
Aw. – aw.	0.09 cm
Aw. – center	0.07 cm



Enlarged to determine coronal column type. The column here is very large and appears to be smooth on its sides and around its base under the coronal lobes ventral sides.

The ventral sides of the lobes are sulcate, channel edges rolled under evenly.



The apices of the coronal lobes are emarginate. Anther wing apices protrude only slightly sides are broadly rounded the apex with U shaped ends.

Pollinarium enlarged ca. 450x.

Pollinium

length	0.20 mm
widest	0.10 mm

Retinaculum

length	0.07 mm
shoulder	0.08 mm
waist	0.04 mm
hip	0.05 mm
ext.	0.03 mm

Ratios: p/r 2.9 p/w 2.0

Translator/caudicle type: d/o

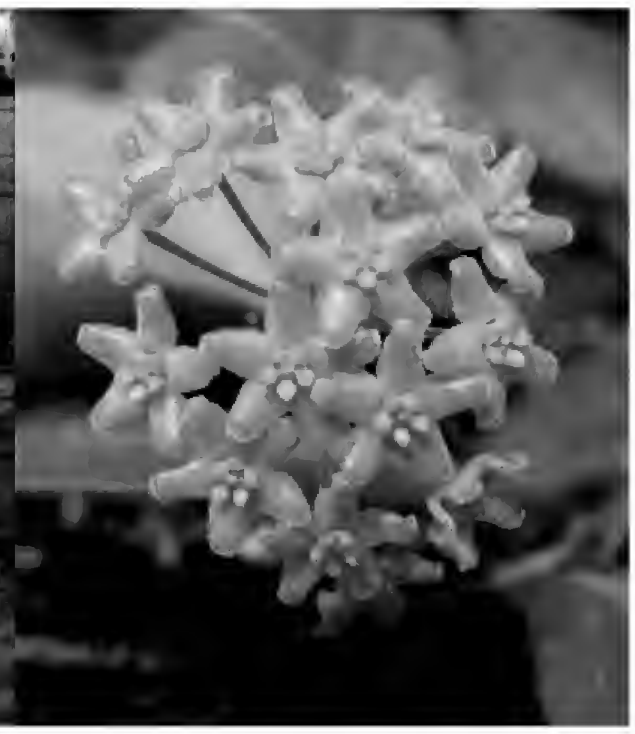
Caudicle

bulb diam.	0.02 mm

Translator

length	0.05 mm
depth	0.02 mm

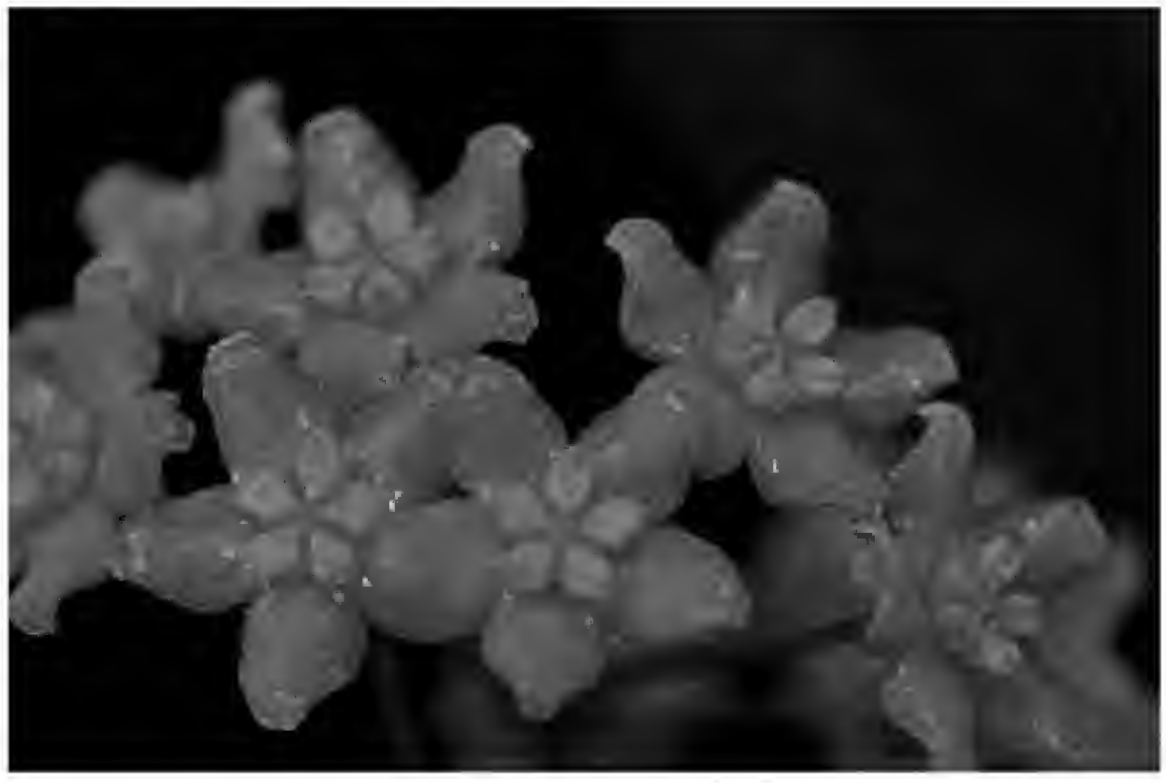
Leaves: opposite, petiolate, glabrous, elliptic. Base obtuse, apex acute, plinerved, anastomosing, nerves lighter colored than the leaf surface.



11. Quezon 2-057

Leaf sample	Length (cm)	Width (cm)	Thickness (cm)
1	13.0	4.2	0.115
2	12.8	4.8	0.135
3	13.8	4.7	0.110
4	9.4	3.1	0.160
5	8.1	3.0	0.130
6	6.4	3.0	0.145
7	8.5	3.1	0.110
8	8.8	3.3	0.125
9	7.8	3.5	0.135
10	7.1	3.0	0.160
Mean	**9.6**	**3.6**	**0.133**
Range	***6.4-13.8***	***3.0-4.8***	***0.110-0.160***

Photos from George Mendoza, Manila, Philippines.



DSC 3127

DSC 3140

DSC 3143

Collection Number Quezon 2-057. Via Monina Siar 16 May 2011.

Somewhat similar to *Hoya unruhiana* (CAHUP 71807). There is no present hoya species with pollinia 0.20 mm long and with the translators d/o.

Contributors:

Ms. Mary Ann Cajano is the Herbarium Associate at (UPLB) University of the Philippines, Los Banos, Laguna, Philippines.

Ms. Jennelyn M. Carandang, University Researcher Associate, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

Maria Luisa D. Guevarra, University Researcher, Fruit and Ornamental Crops Section, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos, Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkley, plant genetics, Lt. USNR, Plant Breeder and Research Agronomist, now taxonomist of Genus Hoya.

George Mendoza, Landscape Artist, Nurseryman and Plant Explorer from Quezon City, Philippines, visit his web site www.forest-treasures.com.

Dr. Simeona "Monina" V. Siar former University Researcher at the Institute of Plant Breeding-Crop Science Cluster, University of the Philippines, Los Banos, Laguna Philippines. She Helped me (Dale Kloppenburg) greatly for years with hoya species, we all miss her. She died 19 December 2011.

References:

1. A Hoya Pollinaria File (4 Sections) by Dale Kloppenburg 2012 64 pages
2. Translator Types in the Genus Hoya by Dale Kloppenburg 16 pages
3. **Hoya unruhiana** Kloppenburg, Siar, Mendoza, Cajano & Carandang species nova, Typus 71807 (CAHUP)

Photos of leaves and flowers: Year 2011

Photos of leaves and flowers: Year 2012

Holotype – CAHUP # 71852

Hoya coriacea subsp. philippinensis Kloppenburg, Siar, & Ferreras

ISSN # 2329-7336

This hoya species was collected by Ulysses Ferreras in the Philippines on Mindanao Island, Province of Davao del Sur, Municipality of Kiblawan, Brgy. Kimlawis, Sito Bong Mal, loco dicto-Lafla at an altitude of 798 masl. Collection number UF 755.

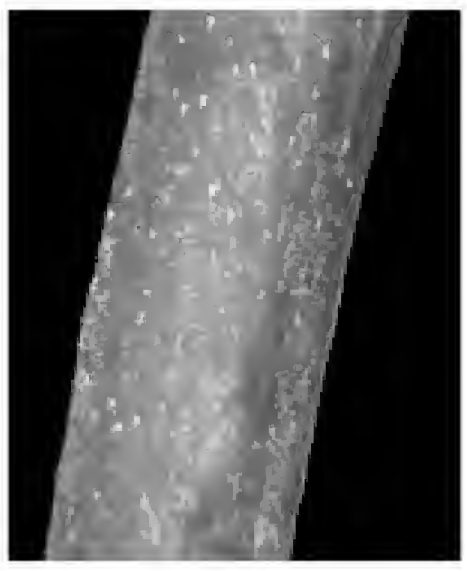
Habitat: Specimen found clambering over a Ficus minahassae tree in a residual forested patch above a landslide along the banks of the Mal river. Forest dominated by Gymnostaoma sumatranum. Understory trees include Neonauclea formicaria, Ficus nota, Ficus variegata and Ficus minahassae. A profusely growing vine with mildly scented flowers.

Material sent via Dr. Simeona V. Siar 1/22/10, 3 flowers in small poly bag.

Hoya coriacea subsp. philippinensis Kloppenburg, Siar & Ferreras subsp. nova, Typus 71721 (CAHUP) hic designatus. Similis *Hoya coriacea* Blume Synonym *Hoya angustisepala* (Elmer) Burton et (*Hoya mindorensis* Elmer) sed pedicillis glabris non pubescens; calyx extus sparsim hirsutum non puberulum; corolla complanatus 2.9 cm diam. contrastre 2.5 cm; coronae lobus angulo exteriore obrusus non reclinatum producta, differt.

The new species is similar to *Hoya coriacea* Blume but different in that the pedicels are glabrous not pubescent; the calyx outside is sparsely hirsute not puberulous; corolla is larger 2.9 cm flattened versus 2.5 cm and the coronal outer apex is obtuse and not turned down.

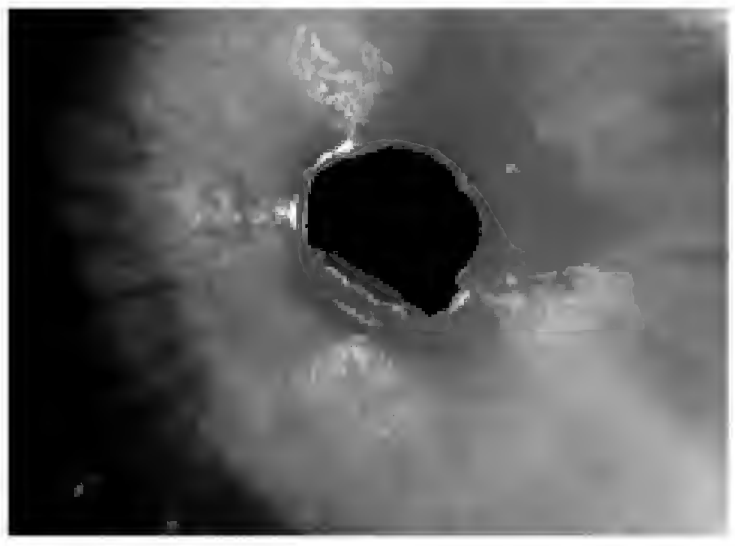
Sepals longer 0.60 vs. 0.38: corolla larger 2.9 cm diam. vs. 1.9 cm, pubescent vs. villous; pedicels 3.2 cm long vs. 1.9-3.1 cm.



Pedicel: 3.5 cm long, curved, terete, glabrous, lenticulate, very slightly enlarged at the calyx area. Enlarged about 16x.

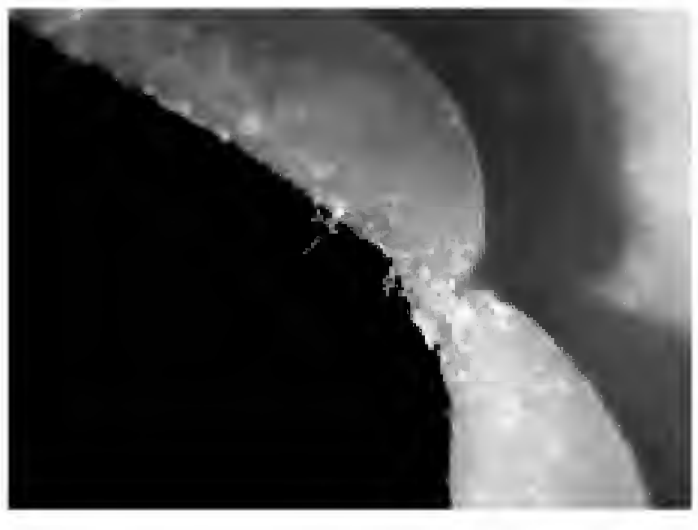
Calyx: lobes linear, reach the corolla sinuses, no overlap of sepals, apex acute. 0.60 cm long, widest at base 0.15 cm, edges ciliate, no ligules. Enlarged about 8x.

Ovaries: glabrous, columnar, 0.21 cm long. Base pair 0.17 cm broad. Enlarged about 8x.

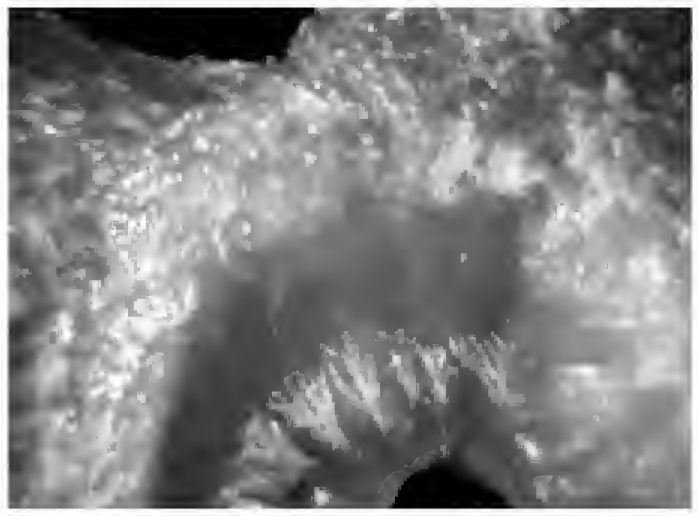


Corolla: reflexed, outside glabrous, inside pubescent, sinuses conduplicate, central dorsal area sunken (concave) with a ring of hirsute cells pointing centrally, apical end acute and dorsal glabrous. Enlarged about 8x.

Sinus – sinus	0.70 cm
Sinus – center	0.65 cm
Sinus – apex	0.70 cm
Apex – center	1.45 cm



Left sinus area with conduplicate edges at the sinus. Right the inside apical area.



Enlarged about 8x. Inside surface of the corolla, note inward pointing hirsute cells near center, this is under the corona.

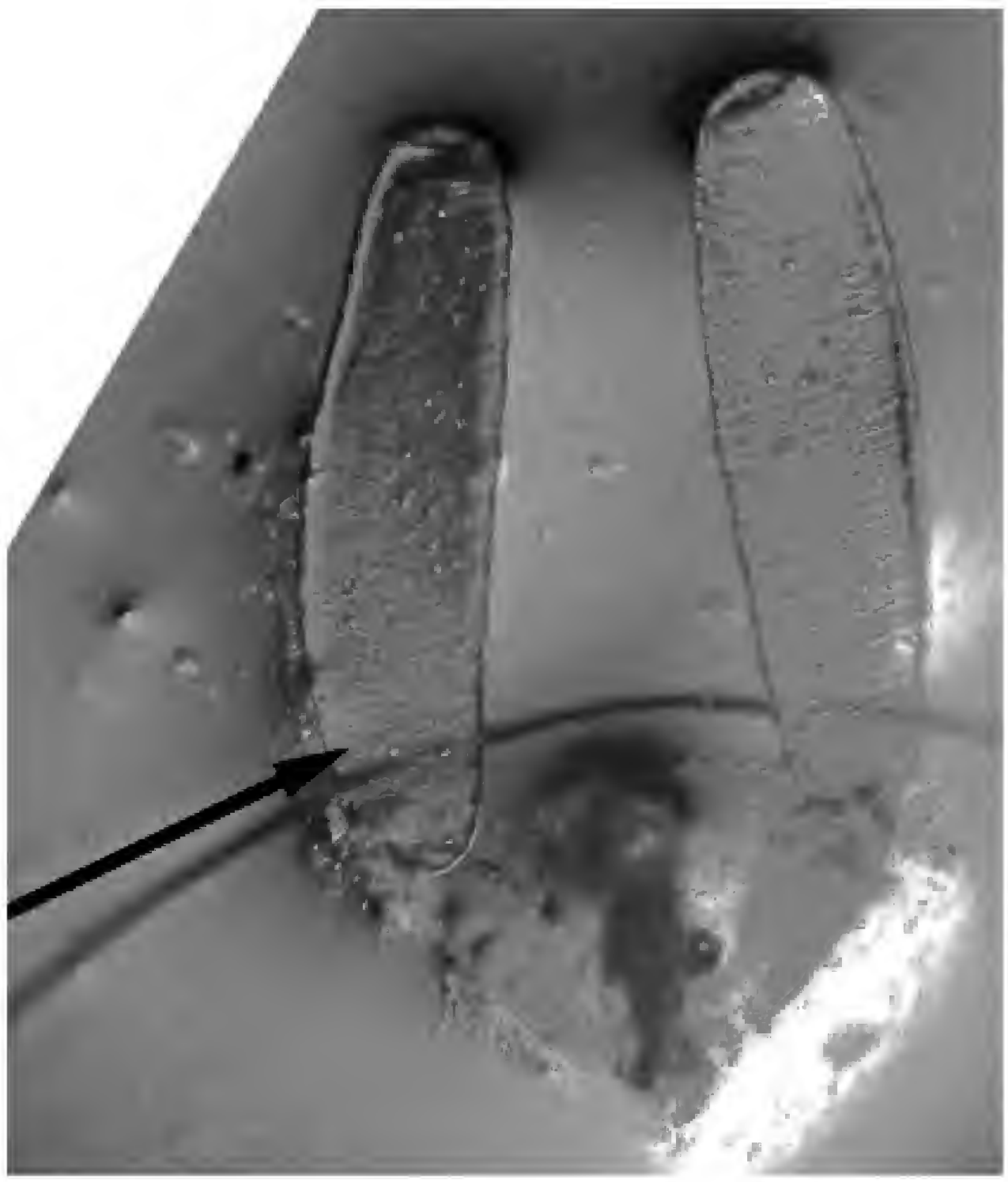
Corona: glabrous, anthers creped, inner apex nearly touch in center are dentate, dorsal keeled to the outer apex which is turned down and emarginated and raised above inner lobes. Below tunnel of channel visible and open, edges overlap, center columnar 0.05 cm tall to ovary base, sulcations nearly invisible. Retinacula hidden.

Apex – apex	0.53 cm
Apex – center	0.55 cm
Ret. – ret.	0.15 cm
Ret. – center	0.15 cm
Aw. – aw.	0.30 cm
Aw. – center	0.40 cm

Pictures in this group enlarged about 17x. Upper left top view of the corona with creped anthers Upper right end of corona scale showing channeling, note no sulcate surfaces. Lower left side view of a coronal scale

Reduced copy of the Holotype sheet at CAHUP.

Leaves: ovate glabrous, leathery, base obtuse, apex acute-acuminate, nerves pinnate ca. 50º to the midrib, 10-13 cm long x 5-6.7 cm widest. Petioles ca. 2 cm long



Pollinium enlarged about 165x.

Pollinium

length	1.00 mm
widest	0.26 mm

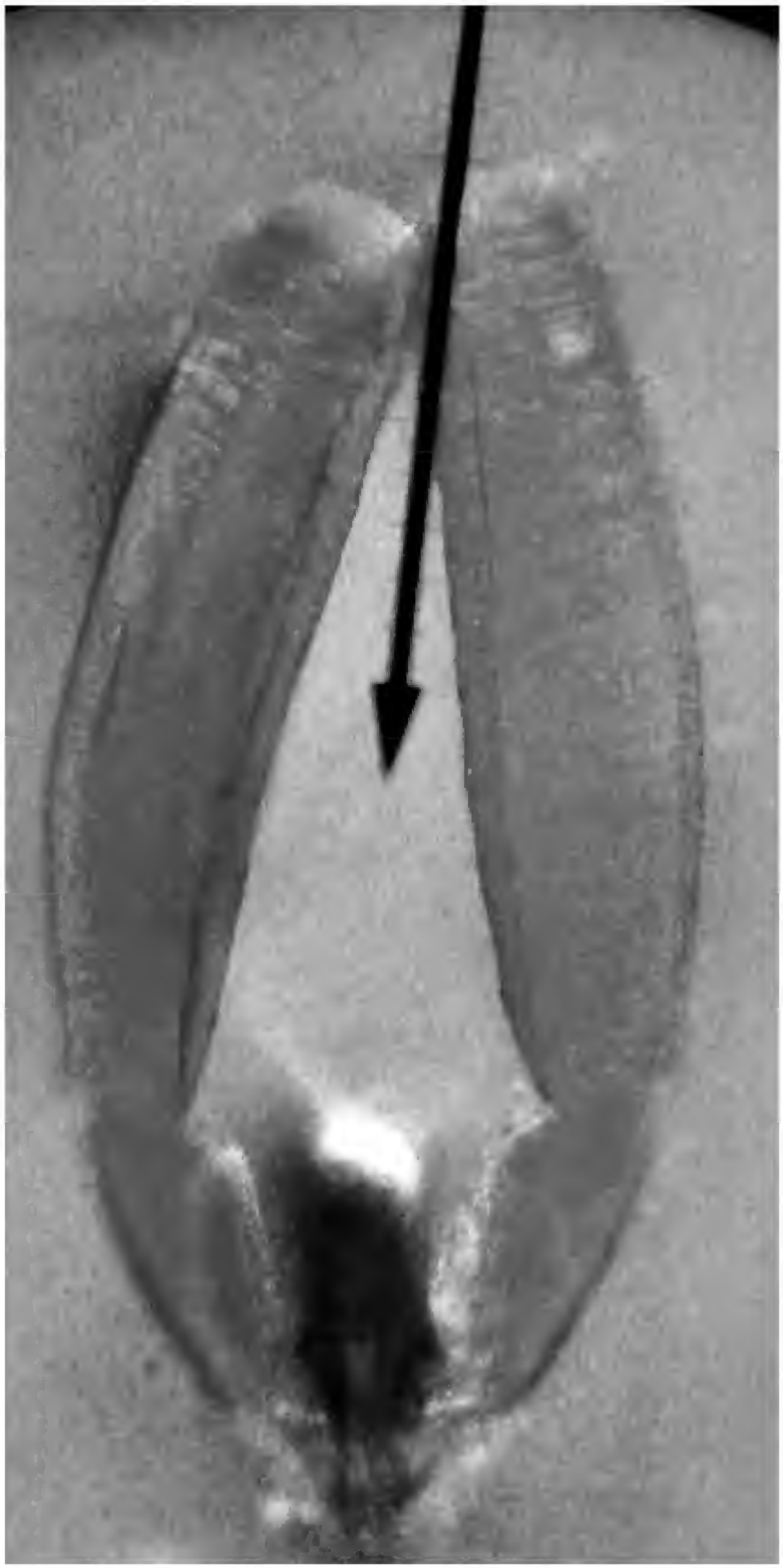
Retinaculum

length	0.40 mm
shoulder	0.10 mm
waist	0.08 mm
hip	0.11 mm
ext.	0.02 mm

Translators

length	0.45 mm

Caudicle bulb: deltoid



Picture via Ulysses Ferreras

Contributors:

Dale Kloppenburg retired: Graduate of UC Berkeley, plant genetics, Lt. USNR, Plant Breeder and Research Agronomist, now taxonomist of Genus Hoya.

Dr. Simeona "Monina" V. Siar former University Researcher at the Institute of Plant Breeding-Crop Science Cluster, University of the Philippines, Los Banos, Laguna Philippines. She Helped me (Dale Kloppenburg) greatly for years with hoya species, we all miss her. She died 19 December 2011.

Ulysses Ferreras: botanist, plant collector, plant taxonomist.

Hoya myrmecopa subsp. kapatalanensis Kloppenburg, Siar, Cajano, Guevarra & Carrandang

ISSN # 2329-7336

Hoya myrmecopa subsp. kapatalanensis Kloppenburg, Siar, Cajano, Guevarra & Carandang subsp. nova. Holoyupus 71853 (CAHUP) hic designatus, A Hoya subsection Angusticarinata Kloppenburg subsp., folia breviter petiolate, lanceolata-elliptica, baso cuneata, apicae acuminatus, utrinsecus glabra; petiolus glabra, sub-teretus, rugatus, curvus. Calyx brevis segmenta elliptica, glabra. Corolla revoluta extus glabra, intus puberulous. Corona phyla a gynostegio breviter, superata, ascendentia, antice rotundatis postice obtusa. Similis sp. sed peduncle longior 8.9-14.0 cm contrastre 1-2 cm; ovaria longior 0.16 cm contrastre 0.12 cm et coronae lobus longior, 0.28 cm contrastre 0.21 cm et pollinia longior 0.45 mm contrastre 0.42 mm, differt.

A scrambling small leaved subspecies found 19 July 2007 at UP Landgrant, Kapatalan, Cinaloan, Laguna. It is similar top the species collected in Sulawesi on the NW side of Lake Poso. This species is a borderline bilobed species exhibiting short bilobes under some environmental conditions and not under others. This subspecies is most strikingly different from the species in the much longer peduncles 8.9-14.0 cm versus 0.28 cm. In general this subspecies is larger in most part.

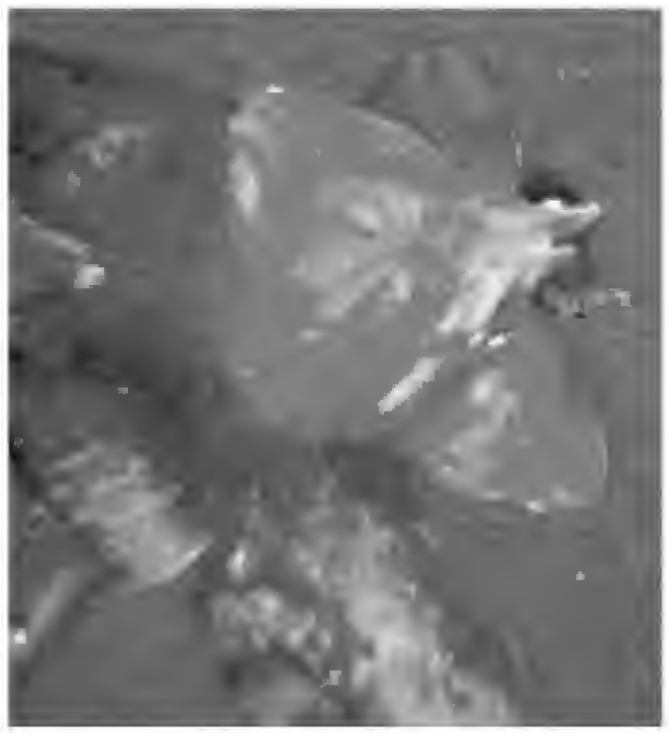
Leaves: narrow, lanceolate-elliptic rather thick enervis bit pinnate, 0.30-0.48 cm long, 0.12 – 0.16 cm at the widest near center, both surfaces glabrous but a few fine hair cells on the upper surface near the petiole attachment, dorsal more rugose in older foliage. Apex tapered acute, base tapered cuneate. Petiole sub terete, rugose, curved.

Pedicel, calyx and ovaries enlarged about 8x.

Pedicel: is terete, glabrous, 1.10 cm long, 0.08 cm in diameter sepals with little overlap.

Sepals: narrow elliptic, glabrous, little basal overlap. 0.14 cm long and 0.06 cm at the widest at base, glabrous, apex sub-acute dark ligules present.

Ovaries: columnar 0.16 cm long and base pair 0.07 cm wide, glabrous.



Side view of a flower enlarged about 8x. The corolla is revolute, thin, outside glabrous inside puberulous. Corona sits conspicuously above the corolla.

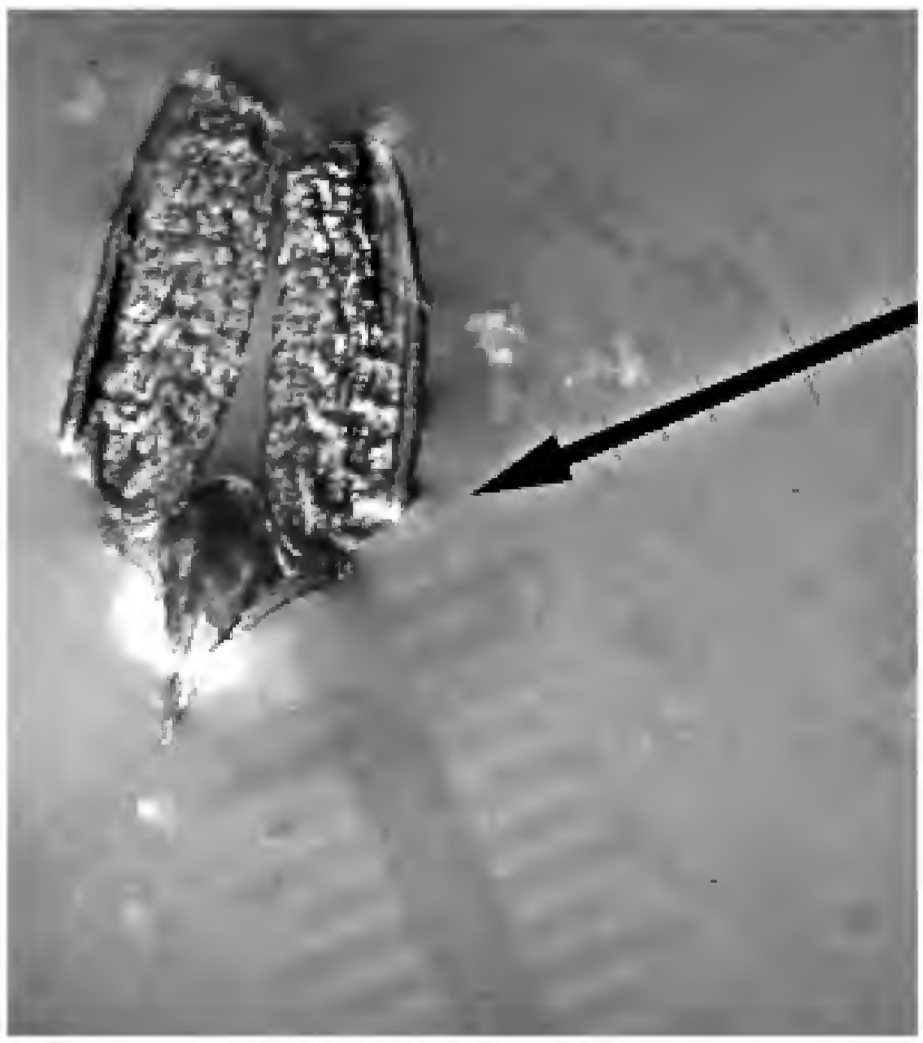
Corolla:

Sinus – sinus	0.20 cm
Sinus – center	0.15 cm
Sinus – apex	0.40 cm
Apex – center	0.50 cm
Widest	0.25 cm

Corona: enlarged about 16x. Surfaces are glabrous. Inner lobes are tapered cylindrical and raised to the membranous anthers in the center. The dorsal lobes are narrow, centrally concave, edged rolled and thick, outer lobe well above the corolla and side lobes rise toward this apex as rudimentary bilobes. Anther wings and retinacula well exposed between the narrow coronal lobes.

Side view of a coronal scale enlarged about 32X. Inner lobe raised round, above the triangular anther, Dorsal of lobe narrow and apex obtuse tapering down to the channeled underside, with rudimentary lobes on either side extending about ¾ the way to the outer apex.

Apex – apex	0.28 cm
Widest dorsal	0.08 cm
Ret. – ret.	0.08 cm
Ret. – center	0.12 cm
Aw. – aw.	0.12 cm
Aw. – center	0.25 cm



Pollinarium enlarged about 165x.

Pollinium

length	0.45 mm
widest	0.16 mm

Retinaculum

length	0.13 mm
should	0.12 mm
waist	0.08 mm
hip	0.09 mm
ext	0.05-.09 mm

Translator

length	0.12 mm
depth	0.02 mm

Caudicle

bulb	0.05 mm

Translator/caudicle type: ls/o

Contributors:

Ms. Jennelyn M. Carandang is a University Research Associate, Crop Science Cluster-Institute of Plant Breeding, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

Ms. Mary Ann Cajano is the Herbarium Associate at (UPLB) University of the Philippines, Los Banos, Laguna, Philippines.

Maria Luisa D. Guevarra, University Researcher, Fruit and Ornamental Crops Section, Crop Science Cluster, Institute of Plant Breeding, College of Agriculture, University of the Philippines, Los Banos, Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkeley, plant genetics, Lt. USNR, Plant Breeder, Research Agronomist, now taxonomy of Genus Hoya.

Dr. Simeona "Monina" V. Siar was head of the Plant Breeding Department at UPLB helped me (Dale Kloppenburg) greatly for years with hoya species, we all miss her, She died 19 December 2011.

Collected by Dr. Siar & Ann Cjano in Laguna province, Siniloan Municipality, UP Landgrant, Barangay Kapatakan. Altitude 300 m asl growing on a Ficus nota 'tibig' tree.

Reduced copy of the Holotype sheet incorrectly labeled as to species (it is the subspecies).

Hoya pseudoleytensis Kloppenburg, Mendoza, Guevarra & Carandang 2013

ISSN # 2329-7336

Hoya pseudoleytensis Kloppenburg, Mendoza, Guevarra & Carandang sp. nova, holotypus 71860 (CAHUP) hic designatus. Sp. nova hic Section Acanthostemma (Blume) Kloppenburg, folia similes *Hoya bilobata* Schlechter 1906; *Hoya leytensis* (Elmer) C. M. Burton 1991; *Hoya memoria* Kloppenburg 2004, sed cum flos differt.

This new species is in the Section Acanthostemma (Blume) Kloppenburg, but differs from all other species in this section. The foliage is most similar to *Hoya bilobata* Schlechter 1906; *Hoya leytensis* (Elmer) C. M. Burton 1991 and *Hoya memoria* Kloppenburg 2004. The main differences are shown in the table below: From *Hoya bilobata* the pollinia are 0.32 mm long vs. 0.19 mm, calyx is triangular versus ovate, corona triangular (sloping) not domed shaped, area surrounding the column is clean not pubescent. From *Hoya leytensis* whose pollinia is 0.21 mm long, calyx 0.15 cm long or less, pedicels longer 1.2-1.7 cm vs. 0.5- 0.8 cm also there is no "ciliated processes between the sinuses or of a ciliate rim around the pistil". Differs from *Hoya memoria* pollinium lengths are similar 0.32 mm vs. 0.30 mm, calyx is triangular not round, and area around column with striking bulbous protrusions unlike the clear area in this species.

Character	*H. pseudoleytensis*	*H. bilobata*	*H. leytensis*	*H. memoria*
Leaf	Uniform 1.5 cm x 1 cm	1.7-2.2 x 1.3-1.8 cm	1.0 x 1.2 tapering to each end	4-9.5 x 2-2.5 cm elliptic-lanceolate, base cuneate
Pollinia length	0.32 mm	0.19 mm	0.21 mm	0.30 mm
Translator/caudicle type	fb/cw	fb/cw	?	fb/cw
Calyx	Triangular; 0.09 cm long; 0.06 cm widest	Oblong – obtuse 0.1 cm	Oblong, 0.15 cm long or shorter	Round? 0.15 cm long
Ligules	1 at each sinus	1 at each sinus	?	2-1-0-1-1
Corona lobe Apex – apex	0.17 cm	0.10 cm	?	0.26 cm
Pedicel	Various lengths; 1.2-1.7 cm	0.8 cm	0.5-0.8 cm	Various lengths; longest 1.5 cm
Other	Area around the column is clear	Area around the column is pubescent	With ciliated processes between the sinuses or a ciliate rim around the pistil	Area around the column with striking bulbous protrusions

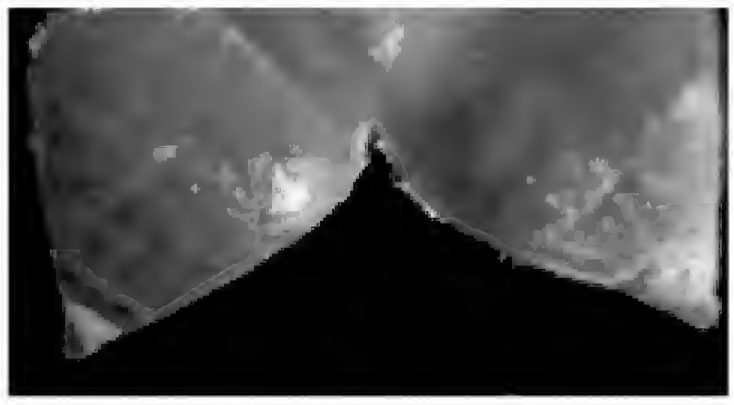
Photos and data below:

Pedicel: enlarged ca. 25x, it is curved, glabrous, terete, of various lengths, 1.2 – 1.7 cm long and 0.06 cm in diameter. Bulbous at attachment to the peduncle.

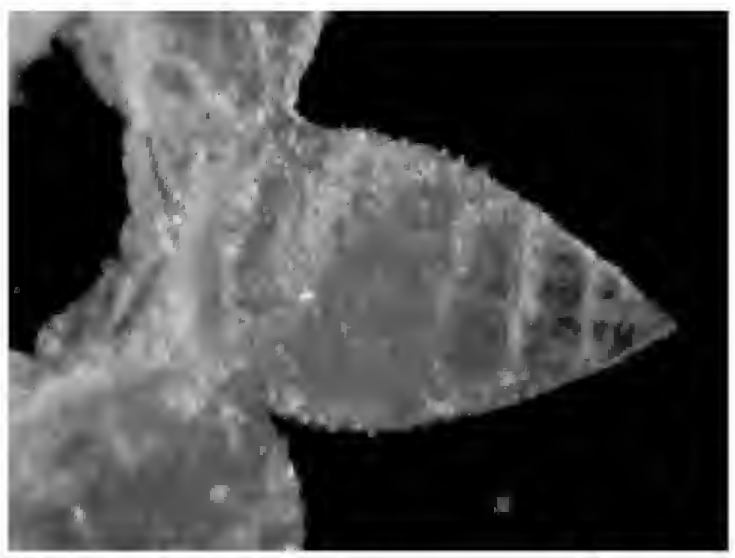
Calyx: side view enlarged ca. 22x, sepals are triangular, outer surface fine granulate and glabrous, inside is slick glabrous, ligules prominent exceeding the sinuses in some instances, 0.09 cm long and 0.06 cm at the widest.

Ovaries: columnar, glabrous, 0.11 cm tall and base pair 0.06 cm wide.

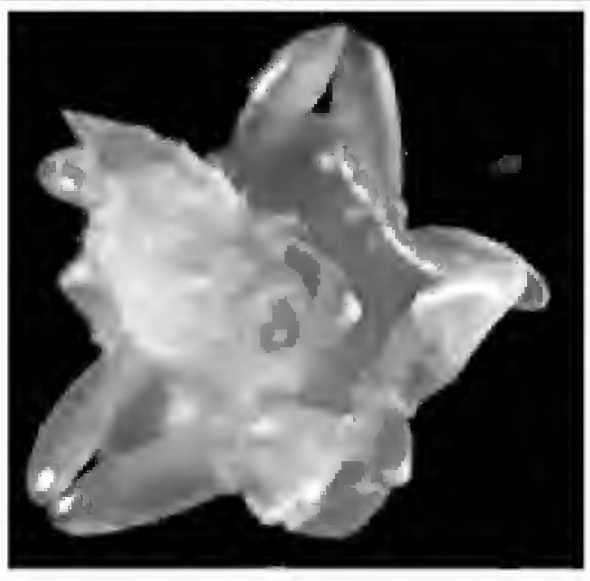
Corolla: outside surface (ventral) of lobes enlarged ca. 20x, is glabrous.



Sinus – sinus	0.20 cm
Sinus – center	0.17 cm
Sinus – apex	0.29 cm
Apex – center	0.43 cm
Widest	0.22 cm



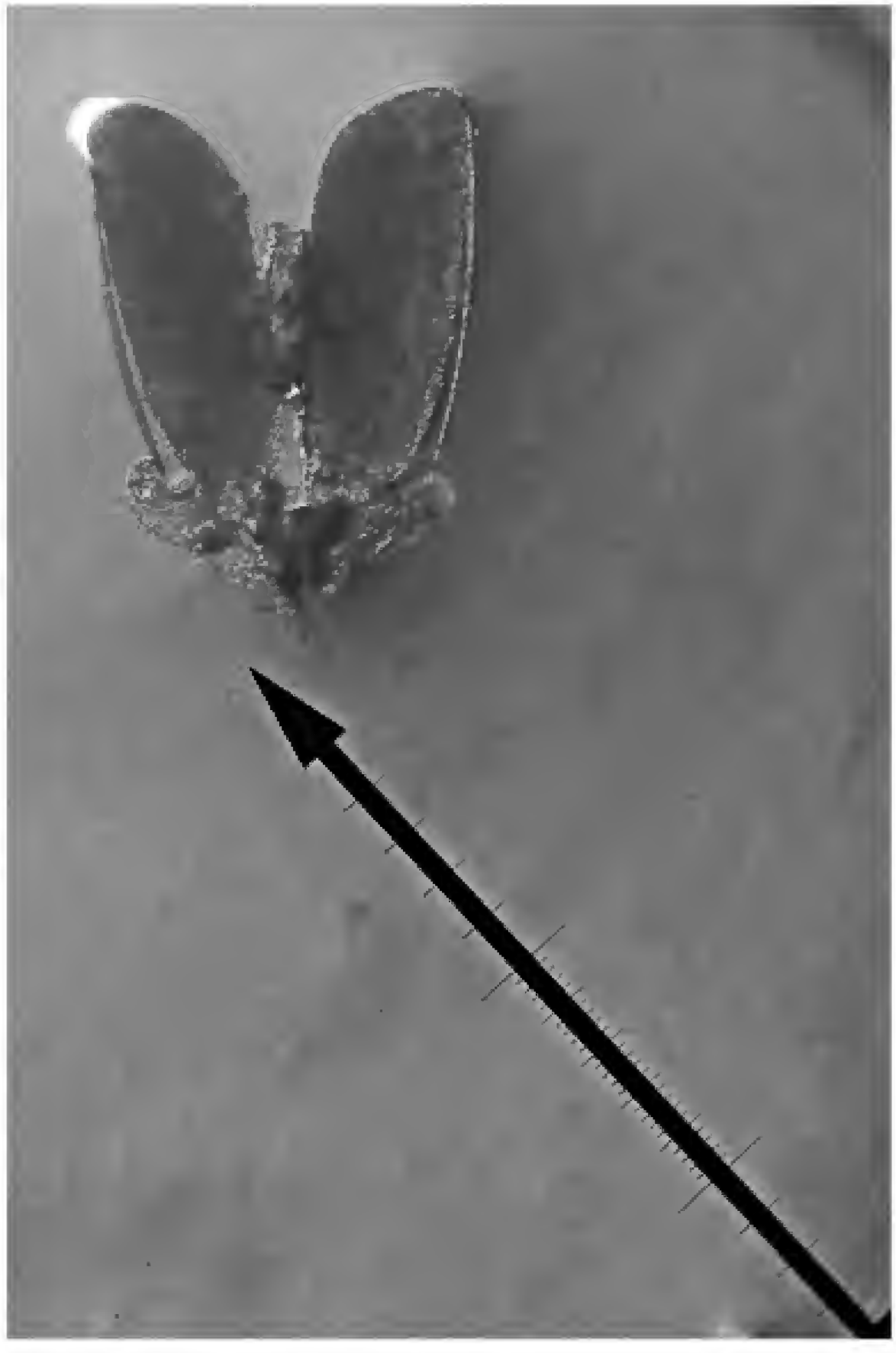
Corolla dorsal surface is pubescent except for a large area of the lobe apices that is glabrous. Apex is acute, corolla is revolute in open flower.



Corona: ventral surface enlarged ca. 18x. The bilobes meet at the outer apices have rounded lower surfaces, central column clear around the base (here a small tag of the corolla remains to the left). Surfaces are glabrous. Bilobed edges almost form a skirt.

Corona dorsal surface, enlarged as above, with center raised, inner lobes are spatulate and meet in the center, dorsal is convex, outer apex is obtuse, with bilobed sides, bilobes turn sideways on outer portions and touch at outer apices.

Apex – apex	0.17 cm
Apex – end	0.23 cm
Widest	0.07 cm
Ret. – ret.	0.07 cm
Ret. – center	0.07 cm
Aw. – aw.	0.13 cm
Aw. – center	0.15 cm



Pollinarium enlarged ca. 140x.

Pollinium

length	0.32 mm
widest	0.15 mm

Retinaculum

length	0.05 mm
shoulder	0.08 mm
waist	0.04 mm
hip	0.05 mm
ext.	0.04 mm

Translator

length	0.15 mm
depth	0.04 mm

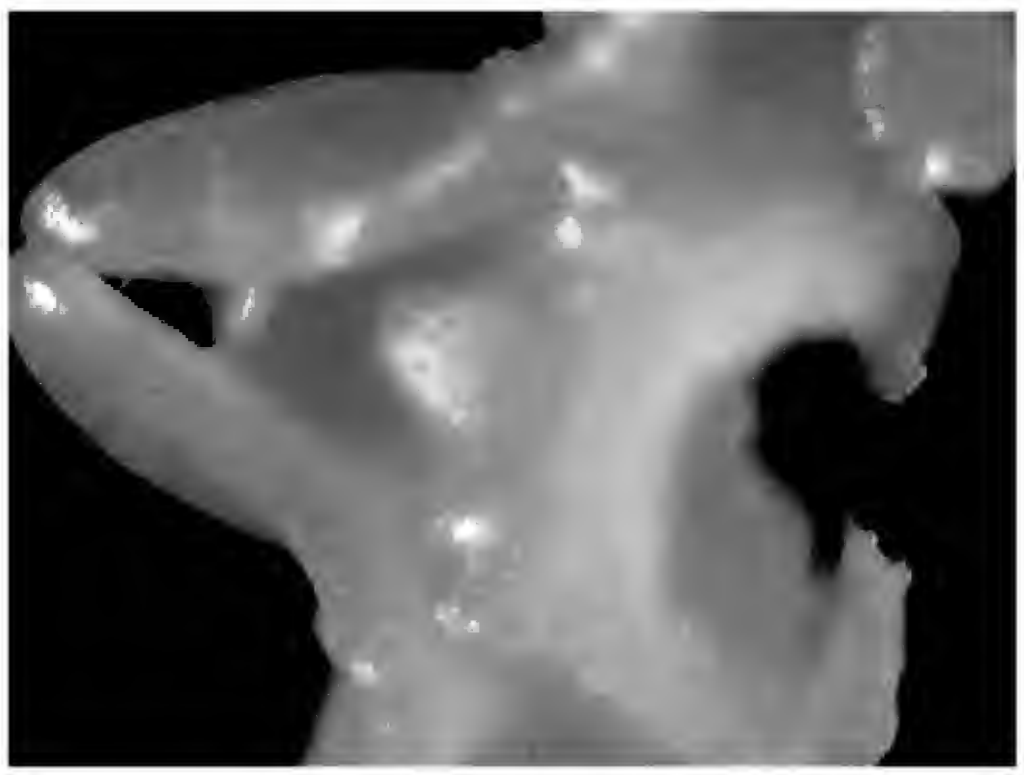
Caudicle

bulb diam. 0.06 mm

Translator/caudicle

Type: fb/cw

Peduncle: enlarged ca. 15x, terete, 4.0 cm long, glabrous, granulate 0.10 cm diameter, expanded at the rachis, which has round bracteate structures where the bulbous based pedicels attach.



Column area on ventral side of the corona showing no ciliate processes between the sinuses or ciliate rim around the pistol as in **Hoya leytensis**. Therefore this species is a false Hoya leytensis "pseudo".

Pictures from George Mendoza

Vial #16 DSC 4442 4450 4451

Cutting and a vial of flowers from George Mendoza 10 Oct. 2011

Leaves: small enervis but pinnate, petiole grooved 0.04 cm long, internodes 4.5 cm long, adventitious roots at nodes. Uniform 1.5 cm long x 1 cm at the widest. 10 seen.

Pictures from Gorge Mendoza, Quezon City, Philippines 24 Sept. 2011, as DSC # 0261. Collected at Baler, Aurora Province, Philippines at 800 m als along the creek inside a mossy mountain on Feb. 2010 by George Mendoza et al.

Cutting and vial of flowers sent by George Mendoza 10 Oct.2011 with code Vial #16, Acanthostemma sp.

References:

1. In Philippine Journal of Science, i, Supplement (1906) 301-302. R. Schlechter. **Hoya bilobata** Schlechter.
2. In Leaflets of Philippine Botany 10 Art. 131 (1938) 3582-83. A. D. E. Elmer. **Hoya leytensis** Elm. n. sp.
3. **Hoya memoria** Kloppenburg sp. nova Typus 81074 (UC) in Fraterna 17 #4:1-5 2004
4. **Hoya Section Acanthostemma (**Blume) Kloppenburg 2003, 160 pp.

Contributors:

Ms. Jennelyn M. Carandang is a University Research Associate, Crop Science Cluster-Institute of Plant Breeding, University of the Philippines, Los Banos (UPLB), Laguna, Philippines.

(Bebs) Maria Lusia D. Guevarra, Her title is University Researcher, Fruit and Ornamental Crops Section, Crop Science Cluster, institute of Plant Breeding, College of Agriculture, University of the Philippines in Los Banos, Laguna, Philippines.

Dale Kloppenburg retired: Graduate UC Berkeley, plant genetics, Lt. USNR, Plant Breeder, Research Agronomist, now taxonomy of Genus Hoya.

George Mendoza, a Landscape Artist, Nurseryman and Plant Explorer from Manila, Philippines, visit his web site forest-treasures.com.

Hoya pseudoleytensis

Figure 1. Holotype of *Hoya pseudoleytensis* Kloppenburg, Mendoza, Guevarra & Carandang, sp. nov. (Coll. GK Mendoza & staff, CAHUP 71860).